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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Nos. 18728, 18729 and 18731

WASHINGTON PUBLIC POWER SUPPLY SYSTEM, STATE OF WASHINGTON, DEPARTMENT OF CONSERVATION, UNITED STATES OF AMERICA EX REL. STEWART L. UDALL, Secretary of the Interior, *Petitioners,*

v.

FEDERAL POWER COMMISSION, *Respondent.*

On Petition for Review of an Order of the Federal Power Commission

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JOINT APPENDIX

Volume I

33

EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS

Opening Statement on Behalf of Washington Public Power Supply System, by Mrs. Cooper

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I think it is important to correct the record as it was represented to you by Mr. Smith. In the first place, as you yourself stated, this proceeding began with the filing of the company's application for a license to build High Mountain Sheep in March of 1958. This proceeding did not begin in 1955. The Mountain Sheep-Pleasant Valley case, which began in that year, was disposed of by the Commission in 1957. It is dead, it is behind us, it can not be resurrected.

With its demise went the original preliminary permit of the Pacific Northwest Power Company for investigation of the Mountain Sheep-Pleasant Valley sites. That preliminary permit did not survive the filing of a license for Mountain Sheep-Pleasant Valley, let alone survive the decision of the Commission denying a license.

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It is apparent from what I have said, from what Mr. Smith has said, that this controversy over full development versus less than full development of the great water resources of the Pacific Northwest, has been one of great public concern over the last several years. And it is also true that the public power, the non-profit utility systems in the Northwest—of which there are many—as well as many of the citizens groups, public groups in the Northwest, have been actively concerned in this matter.

It is for that reason that they waged the fight they did against Idaho Power Company's three small dams. It was

for that reason that they intervened again in opposition to Pacific Northwest Power Company's Mountain Sheep-Pleasant

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Valley proposal. It was for that reason also that they intervened in opposition to the company's filing for High Mountain Sheep. However, it became apparent that without a major effort being made, which the fish agency weren't doing, nobody else was doing—to find a solution for the fish passage problem—Mr. Smith, we can do without your pencil tapping, if you please—that unless an effort was made to find a solution to the fish passage problem, the Salmon River might be lost to the High Mountain Sheep development.

It was for that reason that these public groups, including the public power agencies in the Northwest, proposed to the Congress that a five-year moratorium be established within which the fish problem might be solved and the fisheries' agencies given an appropriation which they had not themselves asked for to finance a crash program that would find a solution to the fish passage problem.

In the meantime, however, pressures were being built up on the Federal Power Commission to begin a hearing immediately. This was in the early spring of this year, in February—to begin a hearing immediately on the company's High Mountain Sheep application, notwithstanding the fact that the company had let its application languish without readying it for hearing for a period of two full years.

Finally, faced with that kind of pressure, and a situation in which it seemed inevitable that a license would be

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issued for High Mountain Sheep, in view of the background and the buildup, if a competitive application were not

filed, because the public power groups in the Northwest did not feel the region nor they could afford to see Nez Perce sacrificed to High Mountain Sheep, it was then that a herculean effort was undertaken and the Nez Perce application was filed. The effort since then has been continually of a herculean nature. It is a credit to the public power agencies in the Northwest, and that includes the whole of the region, for there are 55 of them—co-ops, municipals, country-wide, public utility districts—who are engaged in this effort, that within less than four months' time the Nez Perce project was thoroughly engineered and some 400 pages of testimony from the very best experts that could be found from around the country was put together and filed with the Federal Power Commission. That took no little doing, sir, and the effort has been continuingly intense ever since. It will remain so.

We are in here to see to it that the Nez Perce project is licensed, and we intend to take every step that is necessary to that end, including whatever procedural steps we feel in all good faith and honesty are necessary to protect our position. That is our one and only motivation and objective.

Just a word about Washington Public Power Supply System.

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It is a public body. It is a municipal corporation under Washington State law, with a statutory responsibility on behalf of the State of Washington and the public utilities therein, public and private, for the proper development of the state's water resources and other water resources of the region.

It is composed of 16 countrywide public utility districts in the State of Washington, and as I have indicated, it is representative of fifty-five public agencies and co-ops in the

whole of the Pacific Northwest, scattered through Washington, Oregon and Idaho.

These 55 utility systems have a total investment of more than $1½ billion, and more than 300,000 customers.

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"The State of Oregon, Corporation Department.

"I, Frank J. Healy, Corporation Commissioner, and custodian of the Seal of the Corporation Department of the State of Oregon, do hereby certify as of this date the Washington Public Power Supply System has not made application to this Department for authority to transact business within the State of Oregon. In testimony whereof I have hereunto set my hand and affixed hereto the Seal of the Corporation Department of the State of Oregon, at Salem, the second day of November, 1960, Jack J. Healy, Corporation Commissioner, By Clark Brown."

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67

Official Position—State of Oregon

Q. Would you give your name and address? A. Donel J. Lane, 270 Finance Building, Salem, Oregon.

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69-A

Q. Has the Board considered and acted upon the projects now before the Federal Power Commission in this hearing, namely High Mountain Sheep and Nez Perce? A. Yes.

Q. What was the determination of the Board with regard to the High Mountain Sheep Project? A. The Board found that the High Mountain Sheep Project is in the public interest.

Q. What was the conclusion of the Board with regard to the Nez Perce Project? A. The Board concluded that fish passage problems preclude the construction of this project.

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Testimony of K. M. Robinson

Witness for Pacific Northwest Power Company

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Q. Will you describe how the Company proposes to operate the project as a

(End page 3)

unit in the Northwest Power Pool? A. As later witnesses will testify, this project has been designed for operation and coordination with the Northwest Power Pool, and the transmission facilities that we build for this project will be designed for integration with the Northwest Power Pool network. As we stated in our application, we will operate the project in coordination with the Northwest Power Pool to the extent practicable in view of recognition of benefits by other Pool members resulting from such coordinated operation. One method of operation of this project in coordination with the Power Pool, would provide that the project store water during the summer months and reduce generation to the minimum. This would not, of course, provide power consistent with the requirements of the companies' loads, and, unless such generation be found elsewhere in Pool resources the project could not be so operated. This generation is necessarily available, since that is the direct result of planned, coordinated operation. Since proper coordinated operation on an equitable basis in the long run benefits all parties concerned,

I am confident that all parties will be willing to develop agreements which will provide for

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coordinated operation under fair and equitable terms.

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. . . We have, on the other hand, done a great deal of work on the facilities and we have formally submitted to the responsible agencies designs of facilities that, as Dr. Hamilton will subsequently testify, have been developed, in view of the unique situation at High Mountain Sheep, to utilize as far as possible proven experience at other projects. . . .

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Testimony of Charles C. Bonin

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A. The Snake River at the proposed site is only 200 feet wide. The left (West) canyon wall rises steeply for the first 200 feet above river level, then continues upward on a flatter slope. The right canyon wall rises on a slope of about 30 degrees for the first 200 feet of elevation above normal river level, then continues upward with increasing steepness, reaching a maximum slope of 1 to 1 above the dam crest. The site topography results in a crest length to height ratio of 2.2 to 1.

180

General site investigations were made in 1957 and a foundation exploration program, consisting of eight drill

holes and three test pits, was conducted from October to December 1959. • • •

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268

Testimony of A. E. Alspaugh

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Q. Did you furnish Mr. Tonetti the average generation that future units 6 through 10 would add to the initial system generation and, if so, what were the amounts. A. Yes, I furnished the following data to Mr. Tonetti. Units Number 6, 7, 8, 9 and 10 would add 5.1, 4.7, 3.7, 2.0 and 1.4 average megawatts respectively.

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Q. How did you determine the power plant characteristics, particularly the initial installation, the required hydraulic capacity, rated head for the turbine, and the minimum power pool for the High Mountain Sheep Project,

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which you furnished Mr. Bonin? A. The data furnished Mr. Bonin principally came from the power routing studies. However, three special considerations affected the initial installation. First, present resources of the Organizing Companies would permit operating the project at a relatively high load factor because the Organizing Companies have available extra capacity for a limited period.

(End page 13)

Second, operation of the project at a relatively high load factor would permit water releases without requiring a re-regulating dam. Third, the planned installation permitted a more economic transmission utilization.

Minimum pool was established, as is customary in a storage project, by determining the point at which further storage withdrawals would not create any net power benefits. This point will vary depending upon the system the project is operating in and the value of capacity and energy at that time. Rated head of 550 feet was established after taking into account the expected project operation during its initial period when its head range will be greatest as well as the expected operation of this project in later time levels of regional development.

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Q. Will you explain why you used an initial installation of seven units at High Mountain Sheep whereas the applicant proposed only to install five units initially? A. As I earlier stated, I excluded time delay factors from my power routings in order to produce comparable engineering studies. This dictated the assumption that China Gardens was completed in both plans. My study of Nez Perce showed that the optimum output, initially, from the project, and the full utilization of its storage potential, required an initial installation of 11 units. Again, since my study is intended to show the comparable power potential, it is necessary to make installations comparable in the alternative plans. Having selected an installation of 11 units at Nez Perce, the installations in the High Mountain Sheep Plan providing comparable use and control of the water were 4 units at Lower Canyon and 7 units at High Mountain Sheep.

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Testimony of Owen W. Hurd
Managing Director
Washington Public Power Supply System

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12. Q. Is there any other operating agency in existence in the State of Washington or in the Northwest performing similar functions? A. To my knowledge there is none.

13. Q. What organizations or agencies are eligible to become members of the WPPSS and how may they become a member? A. Every public utility district organized under the laws of the State of Washington, and every city operating an electric distribution system in the State of Washington is eligible to apply for membership and become a member upon approval by majority vote of the existing members.

14. Q. Are Washington public utility districts and cities the only agencies eligible for membership? A. Yes. Cooperatives, mutuals, irrigation districts and private utilities are not eligible for WPPSS membership.

15. Q. In general, what persons govern and control the WPPSS? A. The ultimate control is exercised by a board of directors. This board is composed of one representative appointed by the governing body of each member district or city. Such representative may be an elected officer or an employee of the member organization.

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The board of directors elects the officers of the organization. These are: President, Vice-President, Secretary and Treasurer. The board also selects a Managing Director and an Auditor.

(End of page C-7)

The board of directors has created an executive committee. In general this committee administers the business of the board during intervals between its meetings in accordance with its rules, motions and resolutions. The executive committee is composed of the President, Vice-President, Secretary and four members selected by the board from among its members.

16. Q. Is the business of the WPPSS governed by rules? A. Yes. The board is required by law to adopt rules for the conduct of its meetings and the transaction of business. Rules now in effect constitutes WPPSS Exhibit No. 4, for identification.

17. Q. Do members have a preference to purchase power which is generated by WPPSS? A. Yes. Members have a preference right to purchase power which is generated by WPPSS.

18. Q. Is the WPPSS authorized to enter into contracts with non-member electric utilities and large industries? A. Yes. WPPSS is authorized to negotiate and enter into contracts for the purpose, sale, exchange, transmission

or use of electric energy of falling water with any person, firm or corporation, including political subdivisions and agencies of any state, of Canada, or of the United States, at fair and nondiscriminating rates.

19. Q. Has WPPSS adopted policies and objectives applicable to the Nez Perce Project? A. Yes. The board of directors at a special meeting held July 22, 1960 adopted Resolution No. 61 setting forth basic policies and objectives intended to govern its proposed development of the Nez Perce Project. This resolution is incorporated herein by reference as WPPSS Exhibit No. 5, for identification.

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427

24. Q. Will power be sold on the same cost basis to all purchasers? A. Yes. Power will be sold to all purchasers by contract at cost, that is, without profit to WPPSS.

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Testimony of Robert B. Gallup
Principal Engineer, R. W. Beck and Associates

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44. Q. Have you studied the Nez Perce Project under conditions representative of the initial operating period? A. Yes. I have studied the Nez Perce Project under two possible methods of operation during the initial period.

45. Q. Please describe these two methods. A. The first type of operation analyzed is on the basis of coordinated operation in which the Nez Perce Project would be designed to meet loads with full use of stream flow and reservoir capacity during the critical period on the Columbia River now assumed to be 1936-37. Under coordinated operation it is assumed that outside this critical period extending from September 16, 1936 through April 15, 1937, supplemental energy and peaking capacity could be made available through exchange agreements with the Bonneville Power Administration and other non-Federal utilities to allow the Nez Perce Project to fill and hold its reservoir so that the reservoir would be full at each year on September 15.

The second type of operation analyzed is on the

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basis of ultimate integration of the Nez Perce Project with all other projects in the Pacific Northwest, under the assumption that all resources in the Pacific Northwest will

be operated on a fully integrated basis to meet all loads in the Pacific Northwest as if one utility owned and operated all resources to supply all loads.

46. Q. Do you believe the project will be operated under an ultimate integration basis? A. The type of operation described under ultimate integration is the ideal type of operation from the standpoint of benefits to the

(End of Page K-18)

Pacific Northwest region. Although there are benefits of this type of operation as compared to coordinated operation, the contractual difficulties associated with this type of operation are very complex and, in my opinion, will require extensive time to resolve. It is believed that these difficulties will be resolved in the future but at the present time form a bar to assurance that the project may be operated under the ultimate integration concept.

Detailed studies, however, have been made on this basis for 1967-68 and 1984-85 and it is believed that the basic value of the project for the year 1984-85 should be based upon such operation. Studies for the project for the year 1984-85 assume that such ultimate integration can be

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accomplished by that time.

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Testimony of John T. Monzani
Kuhn, Loeb & Co.

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851

* * * For a successful financing of the Nez Perce Project with revenue bonds, I believe

(end of page P-3)

that it would be necessary for the System to have long-term firm power sales contracts with responsible purchasers for substantially all of the output of the project at rates adequate to pay operating costs and provide debt service and necessary reserves under an appropriate bond indenture. In addition, the System should have a favorable report from its consulting engineers with respect to the economic feasibility of the project. The System's statutory power to fix and revise power rates must be unrestricted and its authority to finance, construct, reconstruct and operate the project must be clear and adequate.

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Testimony of K. M. Robinson

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Q. But you were having work done in the data relating to this application as of March, 1957, were you not? A. I don't know whether it started then, or perhaps a month or so later. But close to that time.

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2696

Mr. Sander: During the recess we have had another 4(e) report come in which we will distribute this morning. In our list of exhibits we have reserved No. 42, which is a letter from the United States Department of the Interior, Office of the Secretary, dated November 21, 1960, addressed to Mr. Kuykendall. It consists of seven pages and is signed by the Acting Secretary of the Interior, Mr. Elmer Bennett.

Presiding Examiner: You are also including the exhibit attached to the seven pages?

Mr. Sander: There is an exhibit attached to it. It is called "Power Outlook, 1960."

Presiding Examiner: "An Estimate of Power Situation, West Group Area"?

Mr. Sander: That is right, dated October 1960.

We do not have copies of this to distribute. It is a Government publication put out by the United States Department of Interior, Bonneville Power Administration. As I understand it, this has just come out.

Presiding Examiner: I wasn't talking about this document. I was talking about a chart attached to the letter.

Mr. Sander: Yes, we are putting that in, too.

Presiding Examiner: You are putting that in as part of Exhibit 42?

Mr. Sander: As part of Exhibit 42. That is a one-sheet, headed "An Estimate of Power Situation, West Group Area, 1961-62 through 1970-71, Critical Prime Power Period."

Presiding Examiner: FPC Exhibit No. 42 as just described will be marked for identification.

(The Document Above Described Was Marked for Identification As FPC Exhibit No. 42)

Mr. Sander: I would like to clear up the matter about this Power Outlook. This accompanied the letter, and since there are references to it, we should probably have it identified as an item by reference.

Presiding Examiner: I take it you are requesting a document entitled "Power Outlook 1960-61, October 1960, U. S. Department of Interior, Bonneville Power Administration"—

Mr. Sander: Have it marked as an item by reference, and I will offer it in evidence.

Presiding Examiner: What letter?

Mr. Sander: It is referred to in this letter.

(Discussion off the record)

Presiding Examiner: Back on the record.

This document will be marked Item E, by reference.

(The Document Above Referred to Was Marked Item E, by Reference, for Identification.)

2698

Mr. Hugh Smith: May I inquire, Mr. Examiner, whether this is being marked as an item by reference on the theory it is referred to in the files of the Commission?

Mr. Sander: No. I believe it is referred to in this letter and it accompanied the letter from the Department of the Interior.

Mr. Hugh Smith: Then it is being marked merely as part of Exhibit 42?

Mr. Sander: On page 3.

Mr. Hugh Smith: Yes, I know the reference is, Mr. Sander. I was just wondering what status you were claiming for what has now been identified as Item E.

Presiding Examiner: I take it the only status is its incorporation by reference in FPC Exhibit 42.

Mr. Sander: That is correct.

Presiding Examiner: Are you offering FPC Exhibit 42 in evidence?

Mr. Sander: I am now offering it in evidence. The reason I am having this booklet marked as an item by reference is to complete the record, since there is a reference to it in the letter from the Department of the Interior.

Mr. Hugh Smith: I will object to the offer, sir, so far as it goes to the attachment to the letter itself, which is identified as an estimate of the power situation, West Group area, and so far as it goes to Item E by reference, if either

2699

the attachment or Item E is offered for the purpose of proving that these are in fact an estimate of future power needs of the Northwest.

Mr. Sander: Staff is not offering them as proof. It is merely offering them as the statements of Bonneville Power Administration as set forth in the booklet and as set forth in this attached sheet.

Presiding Examiner: I will receive this in evidence as what it purports to be, namely, reports of the United States Department of Interior and of the Bonneville Power Administration.

(The Documents Heretofore Marked for Identification As FPC Exhibit No. 42, and Item E, by Reference Were Received in Evidence.)

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3022

Testimony of Charles C. Bonin

The Witness: In connection with a great number of references in the testimony, none of which I have, I have the figure for the number of man-days of time spent by Ebasco Services on the preparation of the license application

3023

and the related work. That is approximately 5,000 man-days. That excludes any of the field drilling program.

By Mr. Wise:

Q. You are not in a position to break that down as between the work expended on the license application and the work expended on your comparative studies? A. No, I am not. Our records were not kept on that basis.

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3164

Let me ask this question: Do you recall approximately the date when you were first instructed to undertake the

(3164)

comparative studies on High Mountain Sheep, Lower Canyon and Nez Perce?

Mr. Wise: I object to that as being repetitive. That has been covered on the direct.

Presiding Examiner: I will permit him to answer.

The Witness: It was late in March of 1957.

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3447

Mrs. Cooper: Mr. Examiner, in view of the letter in the record from the Secretary of the Interior and the attached revision of load estimates for the Northwest, I have discussed both with Mr. Sander and with Mr. Smith the advisability of having someone from Interior—and I have suggested specifically Mr. Bernard Goldhammer of Bonneville Power Administration—appearing as a witness in this proceeding for cross-examination on the revised Bonneville load estimates prior to or offering our witnesses for cross-examination—the point being that our case, so far as load estimates is concerned, is predicated on the earlier and higher BPA load estimates.

Before any of our witnesses are subjected to cross-examination with respect to such testimony, I thing it is necessary and appropriate that we have an opportunity to ascertain the basis for the adjustment of the Bonneville estimates now in this record.

So for that reason I am now formally requesting Mr. Sander to arrange with the Interior Department to produce Mr. Goldhammer for cross-examination upon the completion of the cross-examination of the company's witnesses, presumably as far as I can judge sometime the week of December 12.

3448

(Discussion off the record)

Presiding Examiner: Back on the record.

Mr. Smith, do you have any comment on this request?

Mr. Hugh Smith: Mr. Examiner, the Pacific Northwest Power Company would join with Mrs. Cooper in that request to the Staff.

Presiding Examiner: Thank you.

I think it desirable that the record should include the Interior Department position. We already have in the record FPC Exhibit 42. I think that the cross-examination of Mr. Goldhammer or any other appropriate witness from Interior on these load estimates would be desirable and ought to be included in the record.

Accordingly, I would request the Staff to take the necessary steps to ascertain from Interior and Bonneville as to whether Mr. Goldhammer can be made available.

Mr. Sander: We will transmit the request that has been made on the record to the Department of the Interior.

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4368-A

Owen W. Hurd

was recalled as a witness, and having been previously sworn, resumed the stand and testified as follows:

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4446

Q. On Sheet 3 of five, counsel asked you about one sentence, taken out of context to the paragraph, which I will read.

4447

After speaking here of the matter of the executive committee of one of the other organizations having recom-

mended that the Supply System go forward and make its filing, this paragraph reads "This recommendation did not take WPPSS by surprise. Since its organization in 1957 the problems and feasibility of such a filing on the Nez Perce had been considered. The invitation of FPC in 1957 to the Pacific Northwest Power Company to file on Nez Perce and denying the Low Mountain Sheep application stimulated these considerations and the matter was discussed rather widely throughout the region. We expected the Corps in its review report would take an uncompromising stand in favor of the Nez Perce project and federal authorization. This argued against a filing on Nez Perce. When the Corps failed to take such a stand, S. R. 35, which would delay the licensing of the High Mountain Sheep project was considered preferable to a filing. With legislative action to save Nez Perce moving slowly and proceeding before FPC on the Mountain Sheep application accelerating, it was obvious that the time for action on the Nez Perce filing by a non-federal public agency was at hand.

That is a little bit involved. Would you just refer to that text and state what you meant when you said that a filing—said that the delay in licensing the High Mountain Sheep was considered preferable to a filing?

4448

A. Well, in the first place, we recognized the need and obligation of the companies to provide a future power supply. It was with no intent to prevent them from obtaining a future power supply, but rather insurance of full development of this reach of the river that we were primarily concerned with, and the production of the added benefits in a low cost power and flood control that would result. And in view of all the circumstances the existence of this legislation, the fact that hearings had been scheduled on the Mountain Sheep project, brought us to the

conclusion the time had arrived for the public agencies to make application for a license on Nez Perce.

Q. You weren't governed by the motivation simply to stop the private power companies in their efforts to get applications filed? A. No. I am sure had they filed on the Mountain Sheep—the Nez Perce project, had they seen fit to make a filing on the Nez Perce project in my opinion the public agencies wouldn't have made a filing on the Nez Perce project.

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9343

Presiding Examiner: The next two scheduled witnesses are Dr. Perry and Mr. Pressey. Do you have a statement for the record as to their availability?

Mr. Atchison: Mr. Examiner, I have been advised by the Department of Interior that these two witnesses will not be permitted to testify in this case. We have protested this decision and have received no reply to our protest. I kind of hoped we would hear before it came up but we haven't heard, so I have consulted with Dr. Perry. He advises me that he is forbidden to take the stand.

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9760

Testimony of Jonel C. Hill
Public Utility Commissioner of the State of Oregon

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9768

A. To the extent that Washington Public Power Supply System would own, operate, manage or control all or any part of any plant or equipment in Oregon, such as the dam or transmission facilities for the production, transmission, delivery or furnishing of heat, light or power, directly or indirectly, to or for the public, they would be sub-

ject to Oregon law as a public utility which includes jurisdiction over rates, service, safety standards of construction, maintenance and operation, and sale of securities or the encumbering of their property.

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9956

Jan Andrianus Veltrop

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We, too, can come in with refinements from what we have on the record. As one example, we have discovered—this is one place where Harza educated us—we had established the size of our units on the basis of what we understood were the largest feasible units. We discovered on the basis of the Harza testimony that generator manufacturers were willing to go to larger units. We have investigated that and discovered that we can go to even larger units with substantial economies, and I imagine Harza can do the same thing.

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12883

Franklyn C. Rogers

was called as a witness and, having been first duly sworn, was examined and testified as follows:

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12939

79. Q. Will you describe briefly the modified High Mountain Sheep Project as shown on these exhibits? A. The modified High Mountain Sheep project will include a concrete dam of the double curvature arch type, approximately 670 feet high, with the arch stress taken by the rock abutments except for the upper portion of the abutments, where

concrete thrustblocks are provided on both sides of the river. The spillway structure will adjoin the

(End of page 63)

right thrustblock and will be of the chute type with the discharge controlled by three crest tainter gates.

12940

The crest of the dam will be at elevation 1520 and the length along the crest will be about 2040 feet, including the thrustblocks and adjoining spillway. The maximum controlled headwater level will be at elevation 1510. Five power intakes, located on the upstream face of the dam, will be provided for six initial units and four future units, and stell penstocks will lead from the intakes through the concrete of the arch dam and extend to the powerhouse. Seven 102-inch ring jet valves and conduits will be provided in the middel of the dam as low-level outlets.

The initial powerhouse will be of the indoor type, of reinforced concrete, on the right bank of the river immediately downstream from the dam, and will be protected against maximum tailwater level and pressure. The powerhouse will contain six generating bays and an erection bay and service areas. Access to the powerhouse will be by road from the downstream right bank, passing through a tunnel under the spillway. Access to the top of the dam will be by another, higher level road from

(End of page 64)

the right side of the river. The two access roads will join to cross thhe Salmon River on a bridge in the vicinity of the Lower Canyon damsite near Mile 0.5 and then proceed by a new road to Winchester, Idaho.

12941

The six initial generating units will be rated 210,000 kva at 0.95 power factor plus an allowable overload of 15 per-

(12941)

cent. The six unit plant can produce a maximum output of 1,313,000 kilowatts at the high tension side of the step-up transformers when the resorvoir is at elevation 1510.

The main step-up transformers will be located on a deck on the upstream side of the powerhouse. High voltage (345 kv) transmission lines will run from the takeoff structure to towers on the left side of the river, and then to a switchyard located on a spoil bank on the right bank of the Snake River just below its confluence with the Salmon.

Diversion of the river during construction will be accomplished by one 33-foot diameter concrete-lined tunnel in the left abutment of the dam. The tunnel will be supplemented by an upstream and a downstream cofferdam, with crest elevations

(End of page 65)

of 1006 and 945, respectively, of fill type construction.

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12947

• • • for the Nez Perce, High Mountain Sheep and Lower Canyon projects, the construction period was scheduled as five years.

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13051

Rebuttal Testimony

Chester E. Bauman
Associate and Chief Electrical Engineer, Harza Engineering Company

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13054

For the High Mountain Sheep project, each of the six initial generators will have a rating of 210,000 kva, 0.95

power factor, 14.4 kv, 3-phase, 60 cycle, and will operate at a speed of 163.6 revolutions per minute.

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A. The initial main step-up transforms for the Lower Canyon and High Mountain Sheep projects will each be of the single-phase, forced-oil-water-cooled type. For the Lower Canyon project, six initial transformers, each with a rating of 175 mva, 13.8-13.8, 199/345 kv, will be provided in two banks of three. For the High Mountain Sheep project, nine initial transformers, each with a rating of 155 mva, 13.8-13.8, 199/345 kv, will be provided in three banks of three. Each bank will have two sets of low voltage windings. One generator will be connected to each set of low voltage windings. Therefore, two generators will be operated as a unit on each bank

13055

of transformers.

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13090

Thaddeus Zowski

was called as a witness and, having been previously sworn, was examined and testified as follows:

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13099

A. The six initial High Mountain Sheep turbines as shown on WPPSS Exhibits 266 and 267 for identification, will be of the vertical shaft Francis type operating at a speed of 163.6 revolutions per minute. Each turbine will be rated at 290,000 horsepower full gate capacity under 550 feet of net head and will operate within a range of 504 to 601 feet of net head. The turbines will be substantially the same as in the Nez Perce design, with runners slightly modified as necessary to obtain the same capacity at 550-foot net

head as the Nez Perce turbines have at 570-foot net head. Individual governors with oil pressure systems, similar to those proposed for Nez Perce, will be provided for each unit.

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13101

For the High Mountain Sheep project, as shown on WPPSS Exhibit 266 for identification, butterfly valves of 17-foot inside diameter will be provided down stream of the three penstock bifurcations, at the turbine spiral case inlets, for turbine shutoff service.

For each project, the valve will be hydraulically operated by oil pressure and will be capable of emergency closure in approximately 5 minutes against full turbine flow in the event the wicket gates cannot be closed by the governor. They will be designed for maximum static head plus pressure rise due to water hammer. The valves will be similar to those provided in the Nez Perce design, except that those for the Lower Canyon project will be one foot larger in diameter.

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For the High Mountain Sheep project, as shown on WPPSS Exhibit 264 for identification, seven 102″ inside diameter ring-jet type discharge regulating valves will be installed

13102

at the downstream ends of the low level outlet conduits located in the lower part of the dam.

For both projects, the valves will be elecric motor operated and designed for the maximum static head.

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For the High Mountain Sheep Project, as shown on WPPSS Exhibits 264, 265 and 266 for identification, the

powerhouse will be provided with two double-trolley 350-ton bridge cranes, for use in assembling and servicing the generating units and butterfly valves. One 30-ton gantry crane will be provided

13103

on the draft tube deck to lower, raise and transport the draft gates. A 350-ton gantry crane will be installed on the top of the arch dam at elevation 1520 to lower, raise and transport the power intake tractor gates and the low level outlet works tractor gates. Three 175-ton hoists will be provided for operating the three spillway tainter gates.

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A. The powerhouses will be provided with all the usual mechanical auxiliary equipment needed for station service requirements of a hydroelectric power plant. This includes compressed air systems, oil storage and purification systems, raw and treated water systems, drainage and unwatering systems, sewage treatment and disposal system, fire protection, heating, ventilating and air conditioning systems, machine shops,

13104

elevators, and miscellaneous minor equipment, all of which will provide the necessary station services and will aid in the proper operation of the major equipment.

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14684

Oral Argument of Harry Hogan

Mr. Hogan: Mr. Chairman, Commissioners, my name is Harry Hogan, I represent the Department of the Interior of the United States.

Mr. Chairman, perhaps before I continue I should say that Mr. Frank Barry, Solicitor, and Mr. Edward Wein-

berg, Deputy Solicitor, are here, but have asked me to make the argument.

Chairman Swidler. I am sure the argument is in capable hands.

Mr. Hogan: I hope so; because of the limitation of time I will confine this presentation to the treatment of the issues of fish and power, which we consider the two key issues. This will be presented in the form of two questions, it seems to me, in the form of two questions you will have to answer.

One is, is the Northwest area so deficient in power now that this project, a project in the Middle Snake, has to be brought in now? Or, do we have time to attempt to solve the fish problems, do we have time to allow this project to be brought in later when it fits more properly, we feel, into the multipurpose plan for the region.

Commissioner Ross: Mr. Hogan, why limit it to the Northwest? Why not ask the question whether the West Coast

is deficient in power?

Mr. Hogan: Very properly we could phrase it this way. This is a resource that shouldn't be operated to the benefit of four companies, or even 16 PUD's, it is a resource of the United States.

Chairman Swidler: If Interior built it wouldn't it become a resource of that area of the country, if the bill the Interior is sponsoring became law? I mean the Regional Preference Bill.

Mr. Hogan: This is a modification, of course, on the Preference Bill. But, of course, Mr. Chairman, it contemplates the power from the Northwest will be marketed, that power which is surplus, in areas outside the Northwest.

Chairman Swidler: Under a 60-day retrieval plan,

however, where you could only market it for economy purposes; is that correct?

Mr. Hogan: That is right. We believe the power generated in a given area is most logically and economically used in that area, and that what is surplus to that area should be marketed outside that area.

Chairman Swidler: If this bill goes through either of the other applicants could use the power as a national resource but Interior could not; isn't that right?

Mr. Hogan: If this bill goes through? Whether or not this bill goes through I would contemplate that the

case either applicant here is making is that its members will want to use this power locally, and the result would be that they would withdraw their purchases from the Bonneville Power Administration, not make them, throw the surplus on the Bonneville Power Administration, and we would market outside the area.

Chairman Swidler: You couldn't market it as either firm or secondary power, but only as power subject to recapture on notice in a matter of days?

Mr. Hogan: If the bill should go through, that is true. Of course, Mr. Chairman, and Mr. Ross, as you understand now, the present situation is that Bonneville Power Administration is under a direction to market within economic transmission distance. As it now stands, this power could be marketed in California or any other place we could reach by transmission, subject to whatever contractual provisions were made at the time. If the bill should go through we would be limited, really, with this marketing area limitation, comparable in a sense to that which the TVA found itself under, a marketing area limitation restricting the ability of Bonneville to market outside the area. But if this power, the power represented by

this generation, at either Nez Perce or Mountain Sheep, were brought in now, when in our contemplation the area is surplus in power, it means the surplus would be thrown on to the Bonneville Power

14687

Administration, and we would market it, which in a sense, of course, represents this kind of uncontemplated financial loss among others. Although this power from this project, whichever may be approved, would be a firm power advantage to the area, we wouldn't be marketing firm power outside the area, because we wouldn't have access to this project if the license is given to a non-federal entity.

The second issue is whether federal construction will accomplish a multi-purpose, comprehensive use here which cannot be accomplished by non-federal license.

I want to talk briefly about fish. You have heard a great deal about it in the last few hours. Our attitude on it is simply phrased. We think you are confronted with a judgment on the balance of values. You have a fish resource here of great importance—no question about it. Everybody has expressed the utmost concern about it, including the applicants. On the other hand, you have the possibility that this fish resource should be sacrificed in part, perhaps in larger part, depending upon the project that is licensed, in order to provide an immediate power benefit.

Our position is that we don't need the power now, we do have time, hoped-for time, in which to address ourselves to the technical problems of finding solutions for fish transit, both upstream and downstream. These difficult problems have engaged the attention of a lot of people for

14688

some time.

This Commission has expressed its concern about this problem in the Middle Snake. You have a hearing set in

Portland for June 4th in which you are going to find out the extent of devastation caused there by the licensing of the Brownlee and Ox Bow projects, and what possible solutions there are to it.

Commissioner Ross: Were it not for the fish problem would Interior then take the position Nez Perce is the preper site?

Mr. Hogan: Were it not for the fish problem? You are posing a question in the abstract that is hard to answer, except in the abstract. If there were no fish problem I think probably everybody here would be for Nez Perce. At least as I read Mr. Robinson's testimony before the Senate Committee, subcommittee, on flood control, it was to the effect PNCP itself decided on the other project because of the fish problem at Nez Perce. I think—and, as you heard a witness, or a speaker here say a few minutes ago, he expressed great appreciation to PNCP because of its consideration in that regard.

However, it is not only fish in this sense we are concerned about. We are concerned about bringing in the right project at the right time, and then operating it in the right fashion.

14689

Mr. Ross: You say the right project at the right time.

Mr. Hogan: That is right.

Commissioner Ross: From the standpoint of allocation of national resources, wouldn't it be better to bring in the most economic project, the one that has the better cost-benefit ratio? Why isn't Interior—

Mr. Hogan: We would not propose to sacrifice the Salmon River fish run, no matter what the benefit-cost ratio, in the sense of accounting. The Salmon River fish run is—it can't be replaced, at least by any known technology now. The problem we have is whether it is still

possible to save the fish run upstream in the Salmon River, upstream of Mountain Sheep site.

Commissioner Morgan: You mean the Snake River upstream from Mountain Sheep?

Mr. Hogan: Snake River upstream of the Mountain Sheep site.

The problem we have here is to our mind that that run itself should not yet—it shouldn't yet be written off. We have no contemplation of that. Our responsibility is to preserve that run if we can, and we have, we think, a solid chance to do it. But we need time to do it. This Commission has ordered in the Idaho Power Company license proceeding in the Hell's Canyon matter—it now has a fish study going on with respect to the Ox Bow and Brownlee

projects, which should be in by the summer run, that is by October there should be time to reach conclusions on it. We are proceeding at the direction of Congress, at Interior, on a fresh study of the whole problem of fish transit. We hope to have that in shape by 1964.

We are hopeful if given four years we can have answers. I say four years because it fits in with our prediction of the power needs of the area. We feel by 1972 the Northwest area will be in a power deficiency period when generation from any Middle Snake project should be brought in. Allowing five years for construction, which seems to be the accepted time, this project should be initiated in '67.

Commissioner Ross: Is it true in your determination of power needs you are figuring imports of certain blocks of power during the interim?

Mr. Hogan: This is without imports. However, imports are possible. You have, of course, one problem here, the problem of estimating the loads and resource situation,

what it will be. The period we are speaking of, of concern to you, is 1969 to 1972, because even if this or any project were started immediately it couldn't be completed until 1969. So we are talking about from 1969 to 1972, and the power picture is, of course, also subject to estimates, judgment. Power could conceivably be coming into the area, then, from at least two, possibly three sources, and one is power flowing

back to the Northwest from California on inter-tie, and we estimate we could use up to 400,000 kilowatts on this sort of an inter-tie. We couldn't get it all on one major inter-tie, it would probably take two.

We would also have possibly Canadian entitlement by that time, if their construction goes through, and is completed. All this is to an extent speculative.

I want to leave fish, under the urgencies of time, with this fine summary statement, I suppose, and that is: We feel that there is a good chance to save Snake River run upstream of the site at Mountain Sheep. We need time to do it. We are very hopeful to be able to do it by 1967.

Chairman Swidler: Mr. Hogan, the time factor would not necessarily dictate that the construction should be done by the United States.

Mr. Hogan: In this sense, what we are asking for is delay.

Chairman Swidler: If we were to assume that the project should be delayed for two years, that could be done without denying a license to both of these applicants, who have put in so much time and money. The delay, in other words, is not an argument for denying licenses. I think that that is a separate point, as far as Government construction is concerned, and that Government construction should be bottomed on its merits.

Mr. Hogan: Yes, sir. One issue can be summarized by the word you use, "delay." The other issue is federal construction, itself.

On the delay problem, it has not been the habit of this Commission to issue licenses on speculative needs four or six years in advance. In other words, I think, at least as you have seen your responsibility in this matter in the past, you have issued licenses on demonstration of present need, rather than allow an application to tie things up on some reach of the river or on any resource matter, indefinitely.

But what we are talking about in respect to fish is delay.

I do want to make the point, if I may, a little more strongly, that this Northwest region does not need this power during the period that we are contemplating, that is up to 1972. In that sense, I want to point out two things to the Commission. One is that this record itself is quite out of date. The factual material in the record was prepared in the fall and winter of 1959. This is now 1963, with summer coming on.

What we are talking about really now is the period concerned in 1969-1972, which we are now in a much better position to take a look at than was either applicant three years ago.

Secondly, though both applicants made presentations in

the course of the record regarding the loads and resource picture, you remember both of them had in mind that the result which they wanted to show was that there was an area deficiency which had to be supplied by bringing in this project, a project. That is not our conclusion, at all, not

the conclusion of Bonneville, not the conclusion of the Department of Interior.

When you read this record and contemplate the deficiencies it describes present and potential in the next year or so you wonder whether it talks about the Northwest. There we have a surplus and predictably will have for some time to come.

Commissioner Ross: Then, Mr. Hogan, it is not true the private companies will have power withdrawn from them in 1964-65?

Mr. Hogan: With Hanford coming in, that is unnecessary. We are in process of preparing a letter on it, that ordinarily doesn't go out until August 15. There was a deficiency, a hole, in the general surplus, which is now filled in by Hanford Power. We can now contemplate that with satisfaction.

I want to refer the Commission, if I may, to Table 3 of the Pacific Northwest Power Company, in its reply to our exceptions, on page 18. It is really an extension of the PNCP Exhibit 30. What I am talking about is on page 18 of

14694

the reply to our exceptions, Mr. Chairman. It describes really the area load for the years '69-70, '70-71, and the years thereafter up to '75-76, and we are immediately concerned with the first four of those, and in the year '69-70 the area load is said to be 11,136 average megawatts, total resources at 10,966 megawatts, the conclusion is a deficiency of 170 megawatts, and the same sort of projection and pessimistic conclusion is set forth for the following years. This is like looking for the sun in the morning and finding it rising over the horizon 30 degrees off course. It takes explanation.

We went into the table and found the explanation, which is that, of course, what has been done here is that the

resources are described, on the one hand, the loads, on the other, in order to have a deficiency. In order to have a deficiency the resource has to be less than the load, and the table has been accommodated to reach that result.

For example, in the area load, and we are talking of firm power here, interruptible has been treated as firm. In regard to resources, the steam generation which is available to the area has been excluded. So that in calculating the resources of the area something like 427 megawatts of steam were excluded. In calculating the load of the area the load was increased by treating non-firm load as interruptible to the extent of 480 megawatts as firm. The

Examiner based his decision in large part on Exhibit 30, which precedes this and is subject to the same sort of manipulation.

If the correction is made by subtracting out what has been adding in and adding in what has been subtracted out we come out for each of these years was an area surplus. There is no question about it. I have—

Chairman Swidler: Why should not the companies plan on carrying the interruptible loads if they can?

Mr. Hogan: Because the interruptible load, the word is sort of a word of art, particularly on the Bonneville Power Administration's own contracts for the supply of major industries, particularly the aluminum companies, and there are two reasons, Mr. Chairman, why an interruptible load should not be treated as firm. One is that by definition it simply is not firm; it is load which can be dropped when the water is not available. The second is that the companies, themselves, are buying interruptible. They don't want firm. They want power that comes to them under a contractual arrangement under which they don't have to pay firm power prices. They can take the swings on the market, take a flexible contract, buying power with advantages

they cannot get in the purchase of firm. Interruptible is invariably in the Northwest treated as not firm.

14696

Chairman Swidler: But I wonder if it is not appropriate to make plans to serve it, if you can. If it were not included on the demand end you mean it will nevertheless probably be served if you have an average year?

Mr. Hogan: Oh, yes, yes. Interruptible power has a high degree of security to it, not 100 percent, but a high degree. In an average year we would contemplate being able to serve it.

Commissioner Morgan: Your objection is not toward including the interruptible load as an obligation of the company, but to including it as firm when in fact it is not firm?

Mr. Hogan: Yes, Mr. Morgan.

In a tabulation which purports to show an area deficiency on a firm power presentation interruptible has been used, inserted, to build up a load, a firm load, when it is not such. We are talking about totals, 970 megawatts. I do want to nail down this point, because it seems to me it is terribly important what we are talking about here so far as the area is concerned is the licensing of a project that is not needed to supply the power load of the area, and will not be needed until 1972 on any prediction which we can now make with any degree of assurance.

Commissioner O'Connor: How about the power load of the companies which are applicants?

Mr. Hogan: This is included in the power load

14697

of the area.

Chairman Swidler: It is your suggestion if an applicant comes here and asks to build a project, and has the need for it, that Interior can later acquire another source of

power and thereby pull the demand rug out from under the power company, or the applicant?

What creates surplus, I take it, is Hanford?

Mr. Hogan: No, we have a present surplus and have had for several years, Mr. Chairman.

Chairman Swidler: Hanford would be responsible, wouldn't it?

Mr. Hogan: When it comes in it will give us—

Chairman Swidler: Hanford was not in the picture when this application was filed.

Mr. Hogan: That is right.

Chairman Swidler: You are saying that any application is subject to any later developing situation of Interior or other agencies

Mr. Hogan: Yes, Mr. Chairman. We don't think your responsibility is frozen as at time of application. You have the responsibility at the time of decision to look then at the situation and see what is required, what is needed. If it means that an application has to be refused, this is so.

Mr. Ross?

Commissioner Ross: Mr. Hogan, you have included as the resources available through service through 1972-73 projects not now under construction, have you?

Mr. Hogan: We have used—I will distribute these to you, if I may, a summary statement that I used on the resource picture.

Will you distribute them to the other counsel, Mr. Potter?

What we have done in this picture is to use precisely the same tabulation that appears in PNCP's reply on page 18, which is described as Table 3, and they have scheduled in certain additional resources which are in addition to those listed on their original Exhibit 30.

Mr. Ross: Now, along those lines, on projects such as Lower Monumental, Little Goose, Bruces Eddy,

Boundary, Wells—I don't know about Wells, but some of these other projects, you say PNCP, in order to meet what they say is a deficiency in 1965-66—what right do they have to the output of these projects?

Mr. Hogan: That they have done, we have done, everybody in the Northwest does, in calculating loads and resource picture, is to put in the calculation all the resources that are coming into the area, whether it is private, public agency, or federal. This is true in this listing.

Mr. Ross: Where is the preference clause, where does

that work in, then?

Mr. Hogan: Of course, the pull back provision requires the Bonneville Administration to pull back from private company purchases on five-year notice, which means they cannot get security from the Administration more than five years ahead. And I think it is at this time necessary to distinguish between this statutory and contractural restriction on sale and the resource picture for the area, which you will be considering in deciding whether any given power will be available ahead. You will be able to say, for example, that even though the private companies don't have a contract for power more than five years ahead they can look forward with assurance to it being available in the area, because these projects bring it out that way, building this thing. They have considered here private construction, City of Seattle, Boundary, others, Packwood Lake, Supply System construction, other construction, private construction. These are resources for the area, no matter who brings them in.

This illustrates the problem you will have factually in the record in the sense three years after the initial factual material was prepared it is necessary to update a very important load and resources exhibit, Exhibit 30, by listing

additional resources. This leaves out in this lisitng, for example, Asotin, Lower Granite, and so on.

14700

Chairman Swidler: Footnote 2 indicates steam capacity is not omitted, but simply considered a reserve.

Mr. Hogan: It was excluded from the calculation—I can say from that footnote—considered as reserve capacity.

Chairman Swidler: If this footnote is correct, there are no other reserves, and if you take 1970 or '71, for example, you would have 418,000 kilowatts for reserve, and a total of—a total load of almost 12 million kilowatts, which is about 3 percent. That is hard for me to understand. Those figures don't seem to make sense.

Mr. Hogan: Of course, our area is hydro-electric, except for this small quantity of steam, entirely. I suppose it is unique in that aspect. Steam is used in our area for two things, in our reserve capacities, and one is for critical year usage, and the other is standby in case of maintenance or emergency failures in the area, producing a shortage.

Chairman Swidler: Don't you think you need some reserve for outages?

Mr. Hogan: We have solved that in perhaps a slightly different way in the Northwest in the sense that Bonneville Power Administration has tremendous inter-tie transmission line connections, so that the hydro-electric resources of the area are available to everybody anywhere in the area over this inter-tie connection. However, the steam is an

14701

additional reserve, of course, and it is precisely for that reason I want it counted.

Chairman Swidler: Can you figure surplus without

taking account of the reserves? Is it a true surplus until you have taken something into account for reserves?

Mr. Hogan: What we have suggested here follows the practice throughout the Northwest. First, we have a very conservative way of figuring our resource on the '36-37 critical basis. Secondly, the steam is part of that base. It is partly by usage of the trade, the way it is always handled there, and, secondly, that is so by contract. Two of these very companies who are part owners of PNPC are purchasers from Bonneville under computed demand contracts in which steam is calculated as a resource which they will use on a recurrence of the critical year, on a critical year basis.

I should say that the fact the area is and will be surplus up to 1972 is to us very important, very significant. I want, however, to move on, if I may, because I am going to be in trouble on my time, Mr. Chairman.

Chairman Swidler: Why don't you do that? As you acquire steam, though, you will need more reserves. If you have Hanford in there your proportion of reserves for hydro is not going to take care of Hanford, will it?

Mr. Hogan: The entire hydro-electric resource for the

area is in a sense a reserve for Hanford. This was one of the major reasons why Bonneville had to take an active part in it.

Chairman Swidler: I am talking about equipment failures. If a machine goes out, what do you do?

Mr. Hogan: Pick it up on our hydro.

Chairman Swidler: Suppose it comes at a time of peak load?

Commissioner Morgan: Mr. Hogan, how much reserve capacity is available in the Northwest through running the hydro machines at above nameplating capacity?

(14702)

Mr. Hogan: I don't have that, except that I am told it is substantial. I don't actually know.

Commissioner Morgan: But that can be done?

Mr. Hogan: It can be done, has been done, and presumably will be done again. This is one of the things we have to figure in, of course, in the Hanford problem.

Mr. Ross: Are you inter-tying with British Columbia?

Mr. Hogan: In a minor way now. We have hopes of doing more.

Commissioner O'Connor: Let me ask one more thing that has me disturbed. Is the thrust of what you are saying that as long as there is overall power available in the Pacific Northwest, that individual communities cannot build additional facilities?

14703

Mr. Hogan: Not entirely so, Mr. O'Connor. In this particular proceeding, that is so. We are talking about a very major block of power here.

Commissioner O'Connor: Does that seem justified?

Mr. Hogan: I won't want our position to be construed, though, as one of opposition to private construction. Bonneville has supported private construction throughout the Northwest for many years.

Commissioner O'Connor: I am talking about the fact that some of these people have a responsibility to give service not just for five years, but for 20 years or so.

14704

Mr. Hogan: One of the impressive things about the operation of the utility industry is the keen awareness of the sense of responsibility they have for giving service. It is a matter of intense concern expressed again and again, and they mean it very seriously. But I think this Commission, in deciding upon a project of this size, must consider its impact upon the area which, among other things,

involves inescapably throwing a tremendous burden for surplus on the government power marketing agency if this project is brought in.

There will be an area surplus and it is going to mean financial trouble for Bonneville. What I am saying I think is that I think this is one of the things the Commission has to consider.

There will be many projects where this kind of problem won't be posed, but this does. Bonneville is the power marketing agency for the federal government in the Northwest, and the United States people have about four billion dollars invested, three billion dollars of which, authorized and under construction—three billion dollars has to be paid back.

It is Bonneville's responsibility to repay it and at the same time maintain a low-rate structure that will allow the area to grow.

Commissioner Ross: Why not bring in this project and defer some of these less economic projects that the Interior

and the Corps would like to build?

Mr. Hogan: This one that comes readily to mind I suppose would be Knowles, and I think it was Mrs. Cooper's comment that this project, or either of these two—and the Middle Snake—have a superior benefit-cost ratio and they do. But we would be opposed to bringing them in now when we—even as compared to a project that has a poorer benefit-cost ratio, because we need the time now to solve the fish problem. There is no question in anybody's mind that this area of the river must be developed. We just need time.

This is certainly the best area of river in the Northwest and it is a tremendous pay-off area in power benefit. We have spent $1,600 million in construction of downstream generation which would be under the control of this project.

(14705)

This is a storage project. It not only pays off well i benefit-cost ratio in terms of power generation, but it i important to us in the other aspect. We would want project built here, but we also want the chance to solve th fish problem.

Commissioner Ross: As far as the economic conse quences of building this project are concerned, whether yo or someone alse does it, you say it is going to have thes economic consequences on Bonneville.

Could it be said you are just selling power at too chea a rate?

Mr. Hogan: It has been said.

14706

Commissioner Ross: Is that the answer?

Mr. Hogan: I don't think so.

Commissioner Morgan: Has it been said by any rat payers in the Pacific Northwest?

Mr. Hogan: There are many reasons Bonneville ha financial trouble now. One is that the federal projects tha have been brought in more recently are more expensiv than the earlier lower cost ones built in the late thirties We have had a recession, the aluminum industry, particu larly, will be in trouble, but one of the major reasons is tha this Commission, of course, has licensed, and we hav recommended it, private construction or non-federal con struction in the Northwest so that people to whom we were selling power now have their own.

Bonneville has a kind of a unique responsibility in th Northwest in the sense that it has a wholesaling responsi bility but has no territorial protection, no protection in th performance of that responsibility.

It is not anybody's contemplation that we should have but the result of this is that whenever anyone brings i projects out of time, which is what we are talking about out of time, a surplus of power is available in the area an

that surplus under the system that has been developed by Congress, by people in the Northwest, through their operating utilities, is inevitably thrown on the government marketing agency and this

14707

means, of course, that we lose markets, that we thereby suffer deficits, and that is our situation now.

Chairman Swidler: Why don't you use to a greater extent the "sole supplier" clause that the TVA does, to protect you against this kind of loss of load?

Mr. Hogan: We are now considering rate changes, and that is a suggestion we should take into account, keep in mind, and there has been a hint or two of it in our past negotiations, and it has been met with less than enthusiasm on the part of private utilities particularly.

Commissioner Ross: You mean to tell me you guarantee all the requirements of these customers and then they can turn around and run it out from underneath you?

Mr. Hogan: Precisely.

Chairman Swidler: What kind of—well, you are asking us to give you the protection you fail to get in your contracts then.

Mr. Hogan: Yes, that is right. What we have done, Mr. Chairman, in the Northwest, we are now in the process of evolving a marketing plan or program. Originally Bonneville had this wholesale marketing responsibility and performed it pretty well unchallenged. Then the private construction and non-federal construction changed this picture.

Accordingly we are reviewing our rate structure now and one of Bonneville's people is I think talking to your people

14708

tomorrow about proposals, and this will be one of the things we have in mind.

But also this explains, as you put it, precisely why I am here; because we are not only talking about fish, but also about the integrity of Bonneville and not only repayment of money to the people of the United States, but also Bonneville's ability to perform the function Congress set it up for.

Part of that, of course, comes back to this Commission.

Commissioner O'Connor: How about the five-year limitation, is that statutory?

Mr. Hogan: Yes, five years in the Bonneville Power Act.

Commissioner O'Connor: Why don't you review that while you review all these other things?

Mr. Hogan: Well—

Commissioner O'Connor: I am serious. It seems to me that is a fatal weakness in the marketing set-up.

Mr. Hogan: It is also a Congressional direction, you see. I find myself down to three minutes, and I have not begun to cover two other problems which I think the Commission would be interested in.

Chairman Swidler: You may have another ten minutes.

Mr. Hogan: One of those problems is Section 7(b).

Our position is, in regard to federal construction—and this is something that the Chairman indicated interest in

earlier—we would want this Commission to exercise its responsibility under Section 7(b) and make a recommendation to Congress for federal construction of the Mountain Sheep project. And we think it is quite properly a matter for earnest consideration under Section 7(b). I will read the first two clauses.

"Whenever in the judgment of the Commission the development of any water resources for public purposes should be undertaken by the United States itself, the Com-

mission shall not approve any application for any project affecting such development."

Two tests here. First is "whenever the development of any water resources for public purposes should be undertaken by the United States itself."

The second test is: Does the project in regard to which the application is before you, does that project affect the development of these water resources?

In that connection, I want to hand you, if I may, the frontispiece which apeared in our exceptions. The important thing about this chart is that it indicates graphically the relationship of the storage project we are talking about now to the downstream generation projects, of which there are nine, and every project of these from Asotin downstream is federal; all run-of-the-river plants, all dependent on Middle Snake storage, and that is our problem.

14710

We have been talking about storage control here, and the effect it has downstream. We are not just talking about generation. So, turning back to the first clause in Section 7(b), "Whenever the development of any water resources for public purposes should be undertaken by the United States itself," I would suggest we read that to mean the water resources refers to the nine projects in which Congress has expressed intent regarding development.

In this case the problem before the Commission is not to determine whether development should take place. The answer is already made by Congress to this first sentence, that is, "This water resource," this stretch of the Lower Snake and the Lower Columbia is being developed for public purposes.

So the answer to that test has to be affirmative.

The second test, "The Commission shall not approve application for any project affecting such development." We

submit that should be also in the affirmative. The project before you is either Mountain Sheep or Nez Perce and both affect the water resource below them.

Not only obviously is it indicated by this graphic chart, but also by every bit of testimony on the subject in the record. All the testimony is that the storage produces downstream benefits. What we are talking about here, you can say is: Does this test mean physically affect, and the answer—if that is what it means, the answer must be yes.

14711

Presiding Examiner: Do you find a test in 7(b)?

Mr. Hogan: Yes, in the first two clauses, Mr. Chairman. "Whenever, in the judgment of the Commission" and then the tests "whenever the development of any water resources for public purposes should be undertaken by the United States—"

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Chairman Swidler: That is not a test. That just says: "Whenever in our judgment the development should be made by the United States." But where is the test when it should be developed by the United States?

Mr. Hogan: In this particular instance I don't really have to even suggest an argument on it, Mr. Chairman, because Congress has answered the question. The water resource we are talking about here is from Asotin, downstream, nine projects.

Chairman Swidler: But are you suggesting that means if you built some projects downstream there would be only Federal projects on all the tributaries?

Mr. Hogan: No, no. I am suggesting if this test means anything it must mean something here, because here you have only Federal projects all the way downstream.

Chairman Swidler: You have three private projects upstream.

Mr. Hogan: There is no problem there. We are not concerned about physically affecting private projects upstream.

Commissioner Ross: Is it because Mountain Sheep has, in relation to the whole river, such a substantial amount of storage, and this one project above all others affects the production of power in the run-of-the-mill plants downstream?

Mr. Hogan: Precisely.

Chairman Swidler: I see the argument, but I don't see any test in the statute, which leaves it to our judgment, as I see it. I think we would like to hear the points that you make on

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how our judgment should be guided. But I find no test here, Mr. Hogan.

Mr. Hogan: I do agree that the words "in the judgment of the Commission" give you practically unlimited discretion. You have solved that problem in the past by incorporating really into that first clause of this 7(b) the comprehensive test which is set forth in 10(a) in your practical application. But really what I am suggesting is that in this instance you don't have to exercise judgment, because Congress has for you. Congress has spent $1,673,000,000 on these downstream projects and made the decision to develop this stretch of the river for public purposes. So we really have to move to the second clause and find out whether the project for which application is before you affects the water resource regarding which Congress has made the decision. And physically there is no other but to answer in the affirmative.

The water stored in this stretch of the Snake has to go downstream, and controls our generation downstream. Not only is this so obvious physically, but also by the testimony

of the loads and resource experts and the coordination testimony in this record. All the testimony regarding how this project will be manipulated is stated in terms of what can be done in coordination with the downstream projects and the projects elsewhere on the rver, and this so, whether Gallup for the Supply System, Alspaugh of the PNPC, or Lisk of your Staff is the wit-

ness. All of them contemplate that a great part of the value in this project has to be obtained by coordination.

Commissioner O'Connor: Don't you think we can specify that in our license?

Mr. Hogan: I think that is something, Mr. O'Connor, which should engage your serious attention, because coordination is not easily obtained, and it is not obtained by reciting words in a license.

This Examiner, it seems to me, regarded the word as something which by recitation allowed him to solve the problem. That is not our experience.

Commissioner O'Connor: In other words, you would rather lose "x" number of years of coordination entirely than to take the chance of having a little less coordination for a longer period of time?

Mr. Hogan: Well, I—

Commissioner O'Connor: It doesn't seem to me that this dam can be built with Federal funds as soon as it can be built with private funds, so you lose these values for "x" number of years.

Mr. Hogan: From Bonneville's viewpoint, we would be happy to receive that loss, because we will lose if this comes in ahead of time, and—

Chairman Swidler: In other words, this resource has no value at all until 1972?

Mr. Hogan: A negative value, in the sense if it is brought

14715

in ahead of time the area and the country will suffer. But with respect to coordination, that is easy inside one's system. You have a dispatcher, someone to run a board study, he can order everything done.

Back in the thirties, Bonneville was the major operator, controller, if you wish, of the projects on the river, and coordination was relatively easily accomplished inside the Bonneville system, and it could accommodate others as they came on. Increasingly, of course, this became more difficult, awkward, and this is historical evolution. We have development of coordination among all the parties in the Northwest, informal arrangements, contractual arrangements, finally quite sophisticated arrangements. We have placed two coordination agreements before this Commission, for example; but nobody is under any illusion that coordination is easily arrived at, unless the Examiner was.

We believe it will take a much more sophisticated provision than you have in this license—

Commissioner Ross: What assurance does the country have that the 1948 flood won't be repeated, where Grand Coulee couldn't be used for flood control purposes?

Mr. Hogan: I noticed that assertion in one of the pleadings, and, of course, put my questions among the government people to find out if that was so, and found them quite outraged by the statement. However, I was informed that it is true Grand Coulee was originally constructed not as a flood control project, and

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therefore in the original planning some of the flood control facilities for quick release were not incorporated. Later they were, to allow the job to be done physically that turned out had to be done.

I don't think it is a problem now. The coordination

agreements themselves subordinate, to everybody who is party to the agreement, the control of their projects to non-power uses. I have in mind that coordination is not something we or anyone contemplates can be arrived at easliy, and such is the testimony of the witnesses in this proceeding, both on the part of PNPC and on the part of the Supply System, and that is that they are hopeful about it, they are hopeful about it, they want to see it accomplished, but they are not sure in the long run it can be.

Now, I did run out of time and I didn't get to the President's statement.

Chairman Swidler: Suppose you take five minutes and we will try to—I would like to hear you on the President's statement.

Mr. Hogan: Well, Mr. Chairman, the Department of Interior, of course, has recommended that this project, the Mountain Sheep project, be constructed by the United States. In this recommendation we joined with the Secretary of the Army, it was approved by the Bureau of the Budget, and went forward to Congress. In so doing we, of course, applied precisely the tests the President

refers to in the statement: "I would put the burden upon the Federal Government to prove either that the site will not be adequately developed, that the service would not be satisfactory, and that only the Federal Government can do it, before I would support the project."

He goes on to say later after his attention is called by the president of the Montana Power Company, the questioner, president of one of the companies who is a member of PNPC, he says, "But I will be glad to look at that again." He had looked at it before, he said he would look at it again, and following this colloquy, on the 9th of this month, the Secretary of Interior did talk to the President,

and I am authorized to say that we are not informed that there is any change in the administration's position.

Commissioner Ross: Along these lines, what can you do that these other fellows can't? You have discussed coordination and the economic impact on Bonneville. But flood control, navigation, they are not under your jurisdiction, in the first place.

Mr. Hogan: They are primarily under the jurisdiction of other agencies, the first two you mention are under the Corps of Engineers.

The witnesses here on both sides states in respect to flood control, for example, they would expect their power losses to be compensated for.

14718

Commissioner Ross: Suppos they said this afternoon they did not expect it?

Mr. Hogan: We would be very happy to hear it.

Mr. Smith: We do not expect our power losses to be compensated for when we operate for flood control.

Mr. Cooper: Nor do we.

Chairman Swidler: How about navigation, Mr. Hogan?

Mr. Hogan: With respect to navigation and recreation, I think both the applicants have done a pretty good job on comprehensive development. I think the dispositive element, and I think this is what you are driving at, Mr. Ross, really has to do with power, and it has to do with the downstream benefits. What we are talking about here is in the range of 270 to 340 megawatts, a sizable quantity, in fact larger than some of these downstream dams that we are talking about, Little Goose, Lower Monumental. This quantity of power can only be obtained by coordination, and only with us. The testimony is unequivocal on that. These witnesses are talking about manipulating Grand Coulee, Albeni Falls, in order to hold water on the Middle

Snake, and that is the only way they can do it. And it is only by hydraulic and electrical coordination with the government system they can get that quantity of power. And we think the Examiner should have been concerned about it, this Commission should be concerned about how that can be achieved, and the only way it can be achieved, and has been in the past historically,

14719

is by making this a Federal project. Any other way is chancy and speculative.

Chairman Swidler: You are familiar with our Wells project coordination provision?

Mr. Hogan: Yes.

Chairman Swidler: This is somewhat broader than the previous provision?

Mr. Hogan: It is. We are happy to be progressing in this direction. This is an area in which we have hoped that the Northwest region can look for help and guidance in coordination. But the Wells provision is anything but satisfactory long-term, in our mind. It still contemplates voluntary arrangements with very little in the way of standard of performance; in respect to Wells it doesn't matter much, because you have a run-of-the-river project there. What goes into this license matters to us and to the region tremendously, to the tune of 270 or so megawatts or better.

Chairman Swidler: Under the Wells provision this Commission retains jurisdiction?

Mr. Hogan: Over a voluntary agreement, yes. And, of course, here as in any voluntary agreement—and this is true with respect to our coordination agreements—there are real problems in persuading people to give up advantageous positions with respect to their own projects, for an over-all good in which their share is, well, it is a little difficult for them to foresee. I

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can go into this at some length.

Chairman Swidler: I think we have already imposed on you.

Commissioner Ross: One last question. How firm is Interior's suggestion that they will—that they are willing to sell a portion of the output of Mountain Sheep, if they build it, to any and all comers? Is this firm administration policy with respect to this particular project?

Mr. Hogan: You mean if the government were to build Mountain Sheep?

Commissioner Ross: Yes. Would you have to get Congressional approval to do that?

Mr. Hogan: Yes. You are talking about modification of the preference clause? Yes, we would be controlled by the preference clause, unless it were modified in legislation. That is right.

Commissioner Ross: Thank you.

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Rebuttal Argument of Hugh Smith

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I just say that we propose to coordinate this project. These four companies have too much at stake out in that area to go play footsey with a big project like this. We are going to coordinate High Mountain Sheep, even if the government won't agree with us, we will find a way to coordinate it outside.

We came in here long before the coordination agreement was signed, and testified through Mr. Robinson that we had designed this project for full coordination with the power pool, with all the storage projects in the area, we propose

14783

to operate it that way and because we knew the benefits of coordination were so important to everybody, we were confident that that agreement that provided for coordination could be entered into.

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I might say the Supply System's expert on this said he didn't think you could enter into a coordination agreement until around 1975 or '80, it was so difficult. Well, a year later we had a coordination agreement. It has been renewed, we are well along towards a 5-year extension, and I think presently we will have something that looks like permanent, long-range coordination.

We are prepared to commit ourselves to coordinate, we know how, we are doing it now. We will commit ourselves to the Secretary. All four of these companies are members of the coordination agreement. We couldn't keep this plant out of coordination if we wanted to. It goes in automatically; the day you issue a license we start putting this into the coordination agreement.

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14810-14813

(These pages are errata sheets setting forth corrections to be made in the transcript on pages 14686 through 14790. These changes have been made in the text of the transcript and the errata pages are therefore omitted from printing.)

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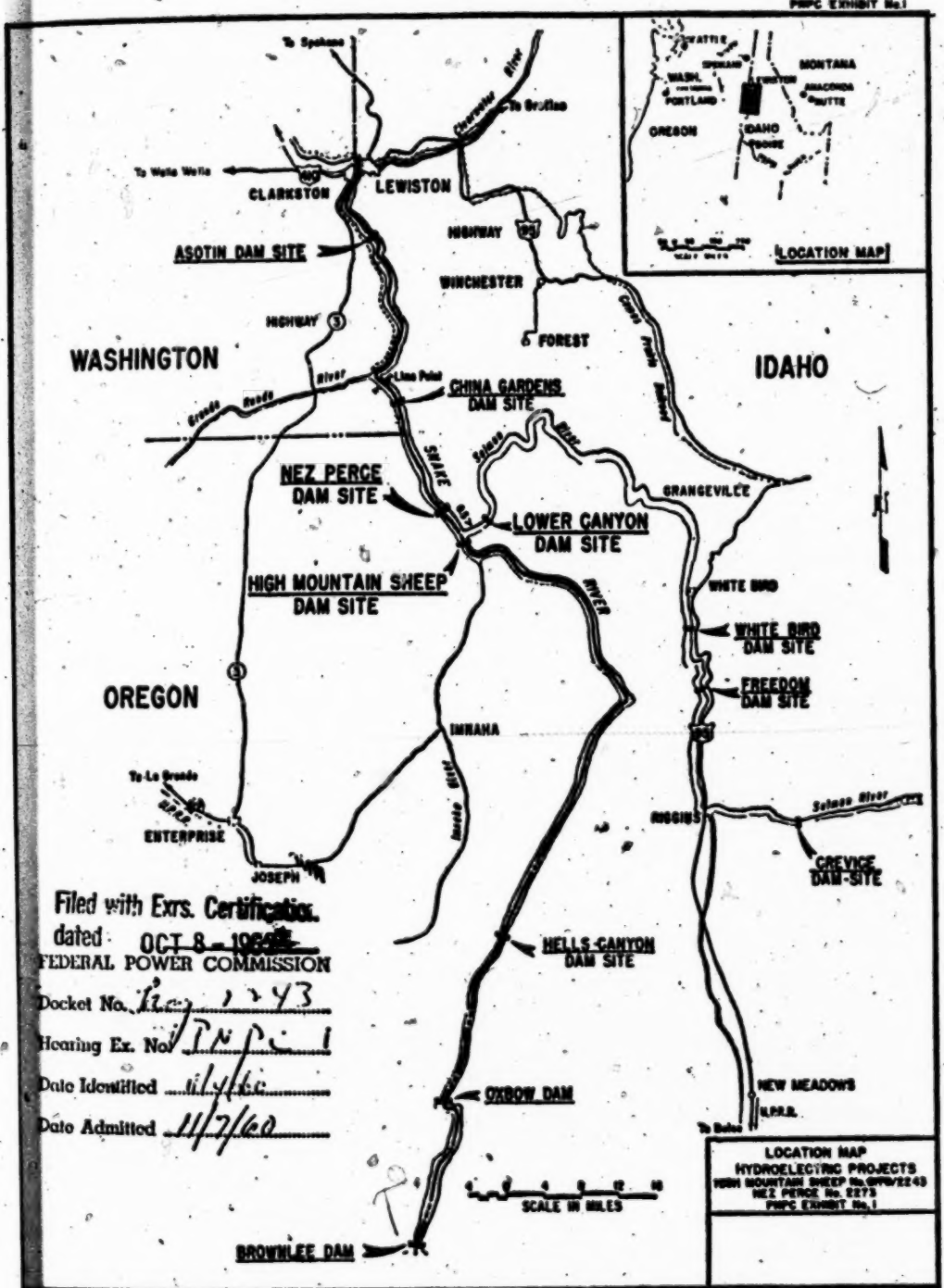
14837

Hearing Exhibit No. PNPC 1



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FEDERAL POWER COMMISSION
Docket No. [illegible] 1243
Hearing Ex. No. PNPC 1
Date Identified 11/7/60
Date Admitted 11/7/60

Hearing Exhibit No. PNPC 6

HEADQUARTERS DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON 25, D. C.

ENGCW-E 24 February 1960

Chairman
Federal Power Commission
Washington 25, D. C.

Dear Mr. Chairman:

Reference is made to the Commission's letter dated 21 October 1959, concerning the amended application filed by the Pacific Northwest Power Company for a license for the proposed High Mountain Sheep Project (No. 2243) to be located on the Snake River in Idaho and Oregon.

The applicant's proposed project would be located about river mile 189 on the Snake River, about one half mile above the junction of the Snake and Salmon Rivers. The top normal pool would be about elevation 1510 without surcharge at the dam. The estimated total reservoir capacity would be about 3,600,000 acre-feet of which 3,100,000 would be usable. The applicant has stated in the amended application for license, that it proposes to: (1) construct, maintain and operate fish handling and protective devices; (2) provide conduits and valves and other suitable equipment for flood control facilities and (3) operate the project with consideration of downstream flow conditions for fishery, recreation, and navigation interests. The proposed operation for flood control under certain run-off conditions would impair the normal power capability to be expected and the applicant states that this lost capacity would require replacement or compensation for the loss of power. This flood control plan and the amount of replacement or

compensation are not discussed in detail in the amended application.

The Division Engineer, North Pacific Division, has recently completed a review report dated June 1958 on the water resources development of the Columbia River Basin. He recommended a project at the same site which would serve the same purpose as that of the applicant. The River and Harbor Board's June 1959 report and my undated proposed report reviewed the report of the Division Engineer and recommended the development of the High Mountain Sheep Project,

among other projects, as a part of the major water plan. These reports were forwarded to you by letter of 9 January 1960 for your views, prior to submission to Congress. In my proposed report I noted that the applicant had submitted a request to the Federal Power Commission for a license and my views were that any development at the High Mountain Sheep site should be equal in scope and purpose to the project I propose to recommend.

The scope of the project and purposes served as proposed by the applicant would be substantially the same as those which I proposed. However, certain provisions in regard to operating the project should be inserted in a license, if issued, in order to assure approximately the same degree of resource development.

It is my view that the project should be operated for flood control as recommended in my proposed report as a part of the comprehensive basin development. Legislation by Congress would be required however, before authority would be available to compensate, in kind or in money, for losses of power occurring during flood control operations. Details of a flood control operating procedure have been

explored in a preliminary manner and it is contemplated that operation for flood control should be somewhat as follows:

a. The total live storage space of about 2,250,000 acre-feet between elevation 1337 and elevation 1510 mean sea level will be made available for flood control use if and as required.

b. The reservoir level will be no higher than elevation 1475 by 1 March each year to provide about 600,000 acre-feet of storage space for flood control use at that time each year. Additional storage space will be made available between 1 March and the beginning of the flood period to insure the availability on 1 May of the total capacity needed for flood control as estimated by the Corps of Engineers.

c. The space made available as set forth above will be retained until capture of flood flows is requested by the Corps of Engineers, subject to involuntary storage as may be required due to excess of inflows over outlet capacity, or until refilling is authorized by the Corps of Engineers. In the event of involuntary storage during flood control operations, full storage capability will be regained as soon as possible.

d. During the flood storage period controlled outflows will be as warranted by the flood control requirements as determined

by the Corps of Engineers with due regard to the requirements for the optimum multiple purpose operation of the project. When the Columbia River discharge at The Dalles is 600,000 c.f.s. or higher, the daily outflow may be reduced to 10,000 acre-feet, except that during years of severe flood conditions, the daily outflow may be reduced to as low as 4,000 acre-feet; below 600,000 c.f.s. discharge at The Dalles,

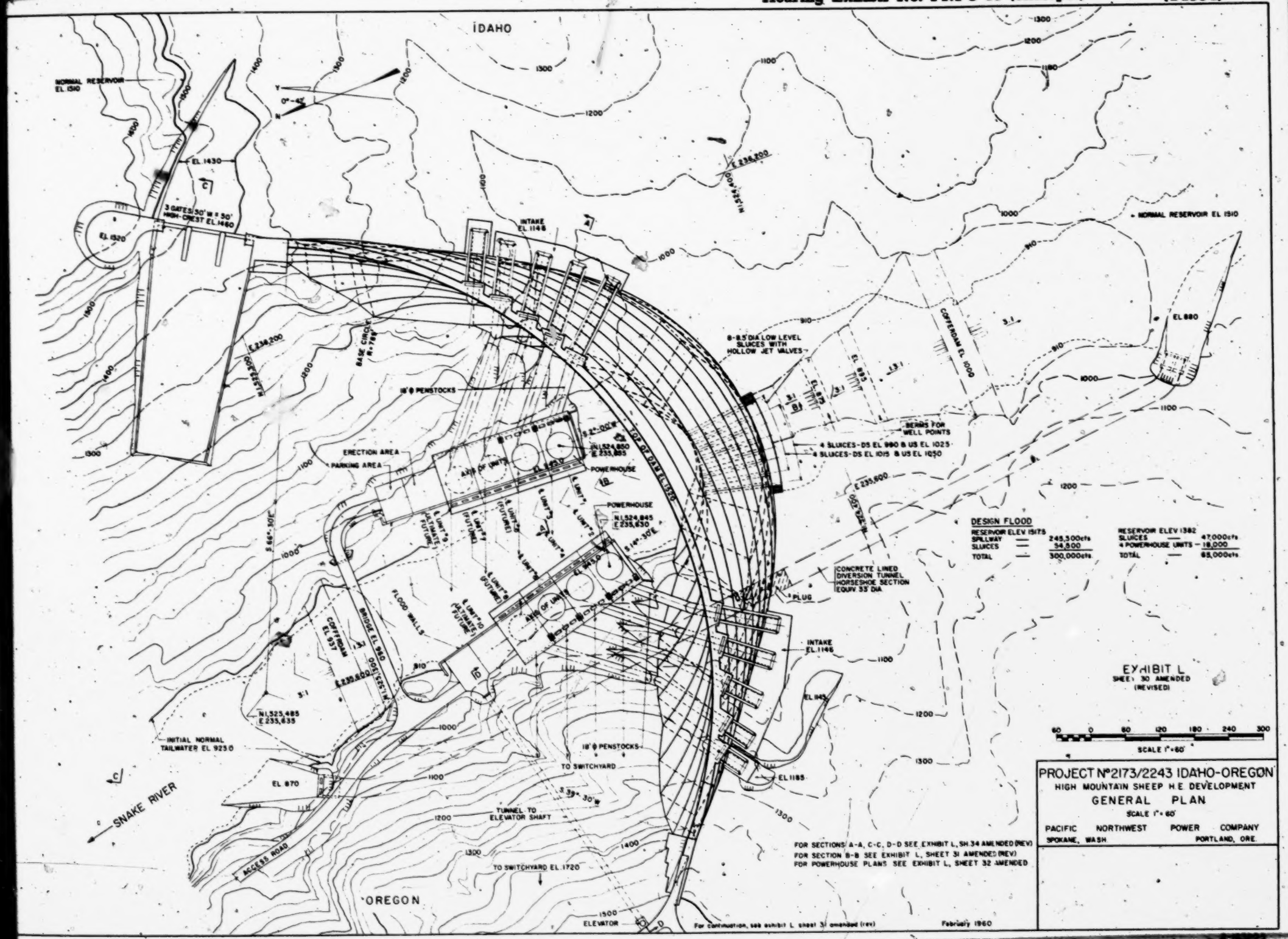
the daily outflow will be determined with due consideration given to all purposes of the project.

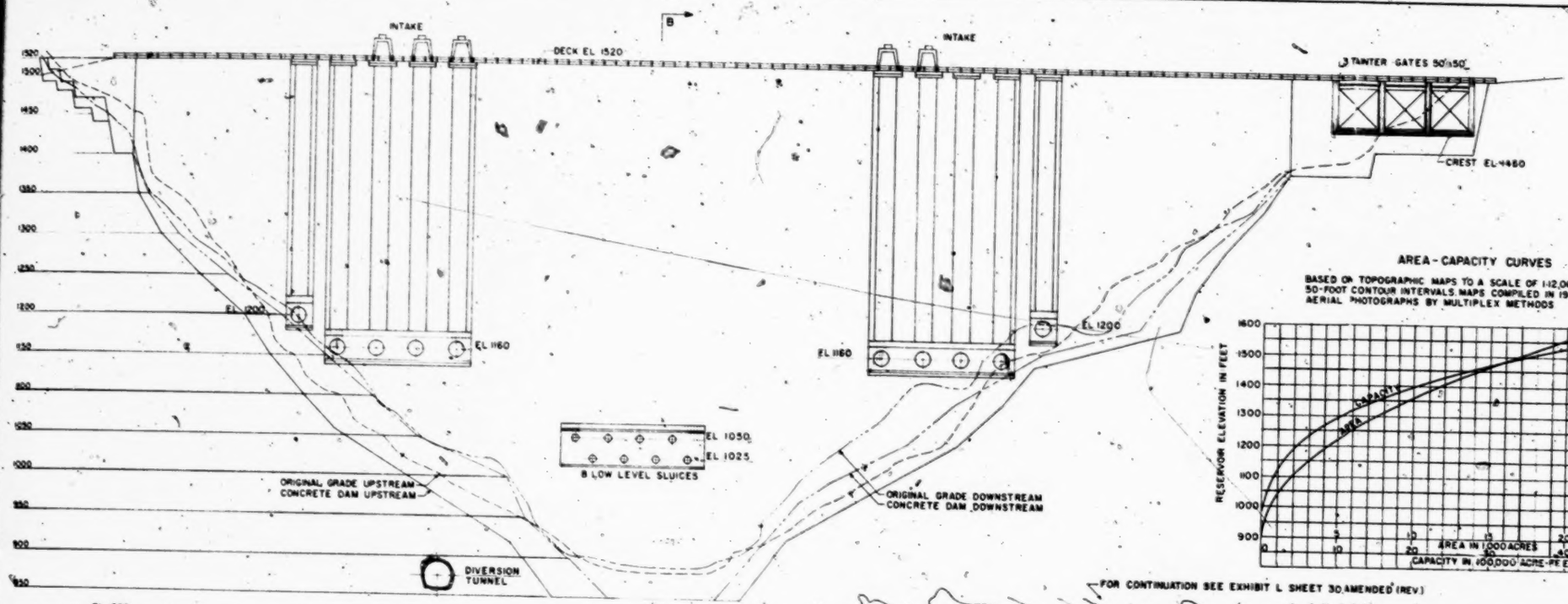
e. A discharge capacity of 65,000 c.f.s. at minimum pool elevation 1382 is to be provided by the Licensee. This discharge capacity is based on the gated outlet capacity plus one half of the ultimate turbine hydraulic capacity.

A discussion of the status of the navigation project on the Snake River is included in Chapter IV of the Division Engineer's Report, dated June 1958. The improvement of the existing navigation channel above Lime Point (mile 172) is not recommended at this time. The construction of a Dam at the Asotin site would provide slack water to Lime Point but lock facilities at the Asotin project are not recommended at this time. Pending development of the Snake River between Lewiston, Idaho and the High Mountain Sheep site, the magnitude of flows from the High Mountain Sheep Project would affect the interest of navigation. I recommend that the license include the Federal Power Act by reference, Articles 9 and 18 of the Commission's Form L-6 dated 15 December 1953, and the following conditions in the interest of navigation:

a. Minimum flow of not less than 13,000 c.f.s. will be maintained at Lime Point, Idaho, during annual storage refill season when determined to be required by the Corps of Engineers in the interest of navigation. Flows of up to 16,500 c.f.s. may be required at other times when determined by the Corps of Engineers to be necessary in the interest of navigation.

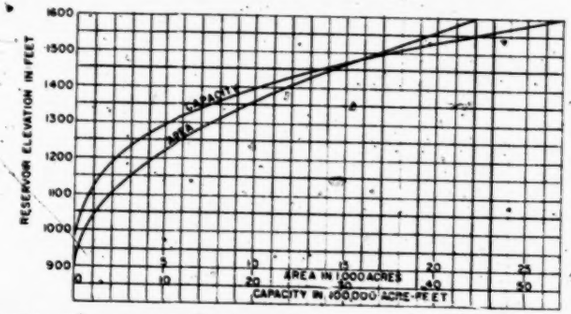
b. River fluctuations in the reach between Lewiston and Lime Point resulting from project operation shall not exceed a rate of one and a half feet per hour on the rising stage, and one foot per hour on the falling stage unless otherwise approved by the Corps of Engineers.


IDAHO
OREGON
NORMAL RESERVOIR EL 1510
EL 1430
EL 1520
3 GATES 30' W x 30' HIGH-CREST EL 1480
INTAKE EL 1148
BASE CIRCLE R=788'
18'ϕ PENSTOCKS
ERECTION AREA
PARKING AREA
POWERHOUSE
N 1,524,850 E 235,805
N 1,524,845 E 235,650
8-8.5' DIA LOW LEVEL SLUICES WITH HOLLOW JET VALVES
COFFERDAM EL 1000
EL 880
BERMS FOR WELL POINTS
4 SLUICES - DS EL 980 & US EL 1025
4 SLUICES - DS EL 1015 & US EL 1050
CONCRETE LINED DIVERSION TUNNEL HORSESHOE SECTION EQUIV 33' DIA
PLUG
DESIGN FLOOD
RESERVOIR ELEV 1515
SPILLWAY — 245,500cfs
SLUICES — 54,500
TOTAL — 300,000cfs
RESERVOIR ELEV 1382
SLUICES — 47,000cfs
4 POWERHOUSE UNITS — 18,000
TOTAL — 65,000cfs
FLOOD WALLS
COFFERDAM EL 937
BRIDGE EL 960
N 1,525,485 E 235,635
INITIAL NORMAL TAILWATER EL 925.0
SNAKE RIVER
EL 870
ACCESS ROAD
TUNNEL TO ELEVATOR SHAFT
TO SWITCHYARD
TO SWITCHYARD EL 1720
ELEVATOR
EL 1185
EXHIBIT L
SHEET 30 AMENDED
(REVISED)
SCALE 1"=60'
FOR SECTIONS A-A, C-C, D-D SEE EXHIBIT L, SH. 34 AMENDED (REV)
FOR SECTION B-B SEE EXHIBIT L, SHEET 31 AMENDED (REV)
FOR POWERHOUSE PLANS SEE EXHIBIT L, SHEET 32 AMENDED
For continuation, see exhibit L sheet 31 amended (rev)
February 1960
PROJECT N°2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
GENERAL PLAN
SCALE 1"=60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH PORTLAND, ORE.



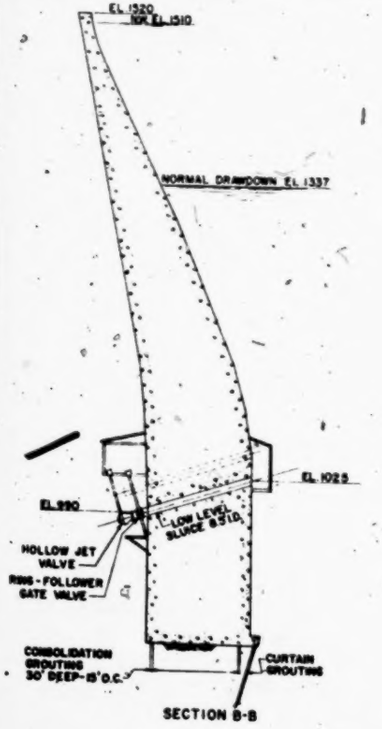
AREA - CAPACITY CURVES

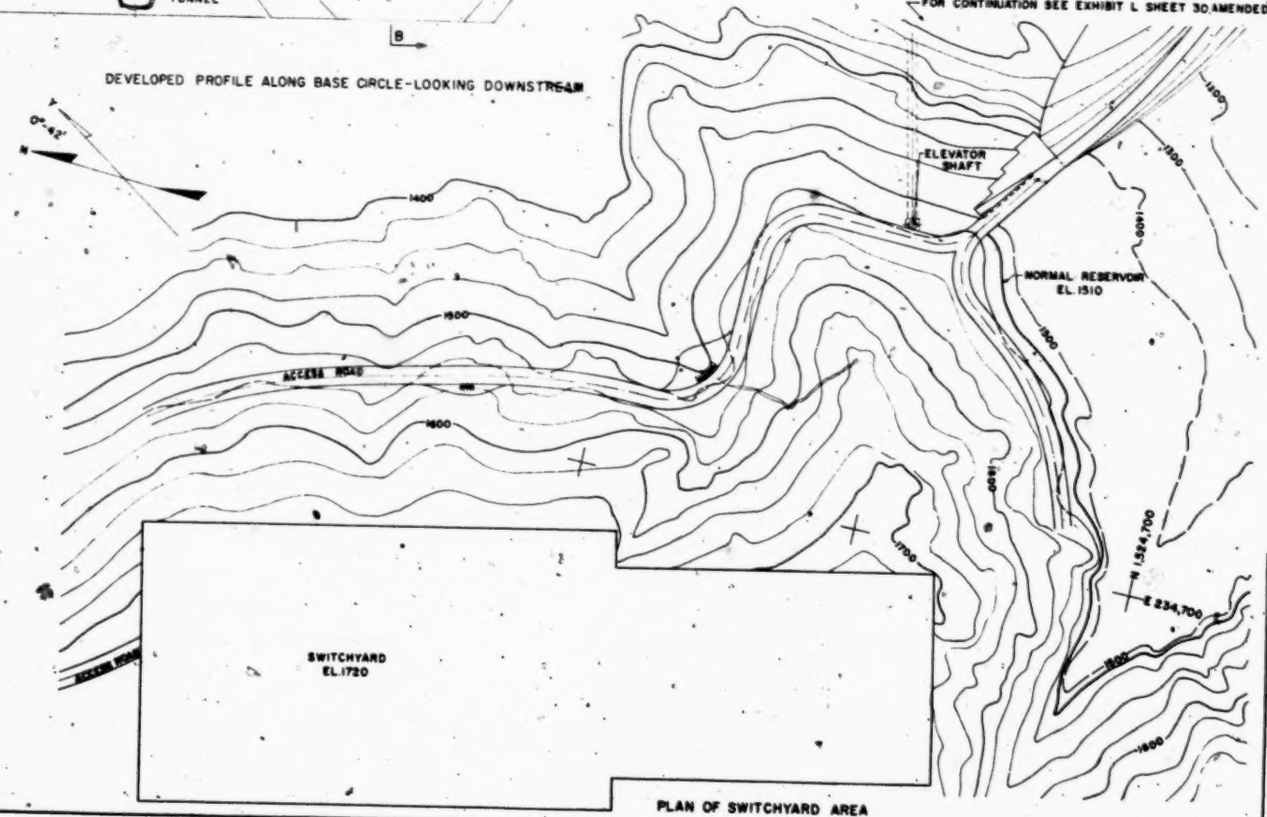
BASED ON TOPOGRAPHIC MAPS TO A SCALE OF 1:2,000 WITH 20- AND 50-FOOT CONTOUR INTERVALS. MAPS COMPILED IN 1946-47 FROM AERIAL PHOTOGRAPHS BY MULTIPLEX METHODS



FOR CONTINUATION SEE EXHIBIT L SHEET 30 AMENDED (REV.)

DEVELOPED PROFILE ALONG BASE CIRCLE - LOOKING DOWNSTREAM





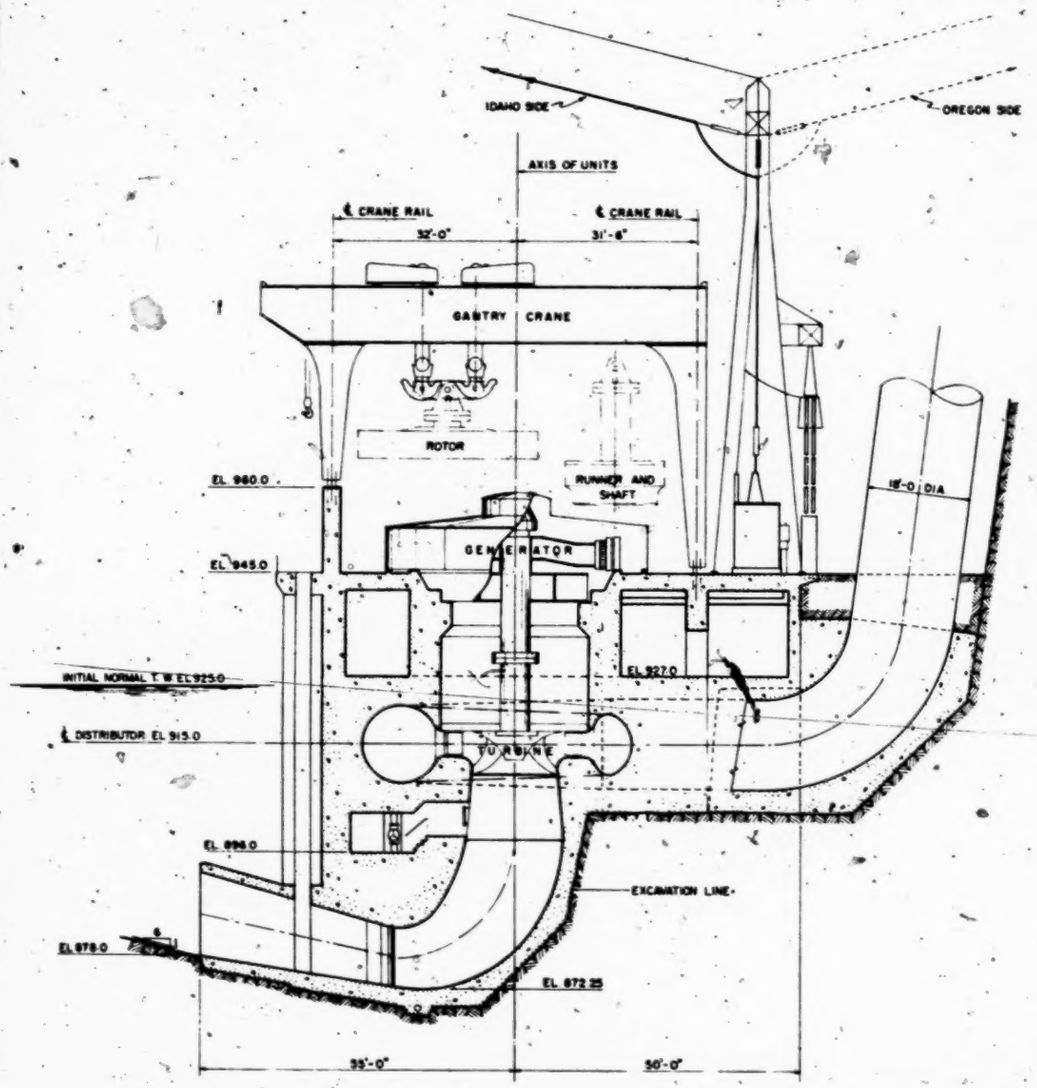
PLAN OF SWITCHYARD AREA

EXHIBIT L
SHEET 31 AMENDED
(REVISED)

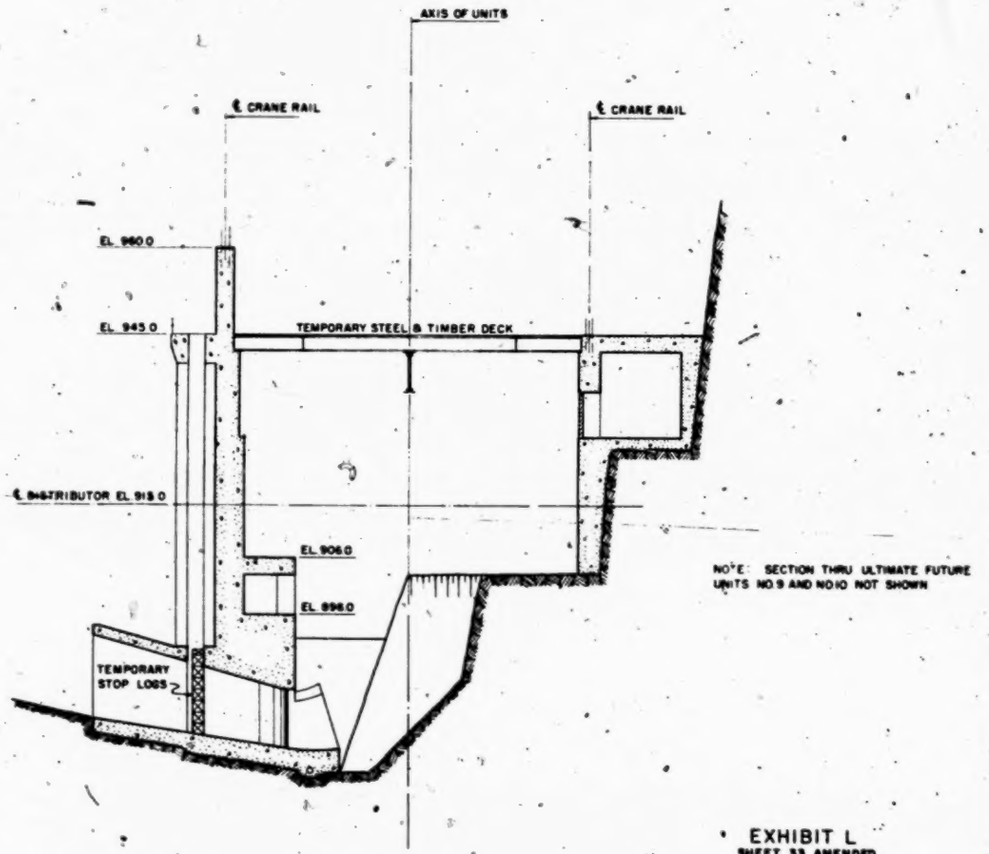
SCALE: 1" = 60'

PROJECT Nº 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
PROFILE & SECTIONS
SCALE: 1" = 60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND ORE.

February, 1960



CROSS SECTION THRU POWER HOUSE UNITS 1,2,3,4 & 6



NOTE: SECTION THRU ULTIMATE FUTURE UNITS NO.9 AND NO.10 NOT SHOWN

CROSS SECTION THRU POWER HOUSE FUTURE UNITS 5,7 & 8

EXHIBIT L
SHEET 33 AMENDED
(REVISED)

SCALE 1"=10'

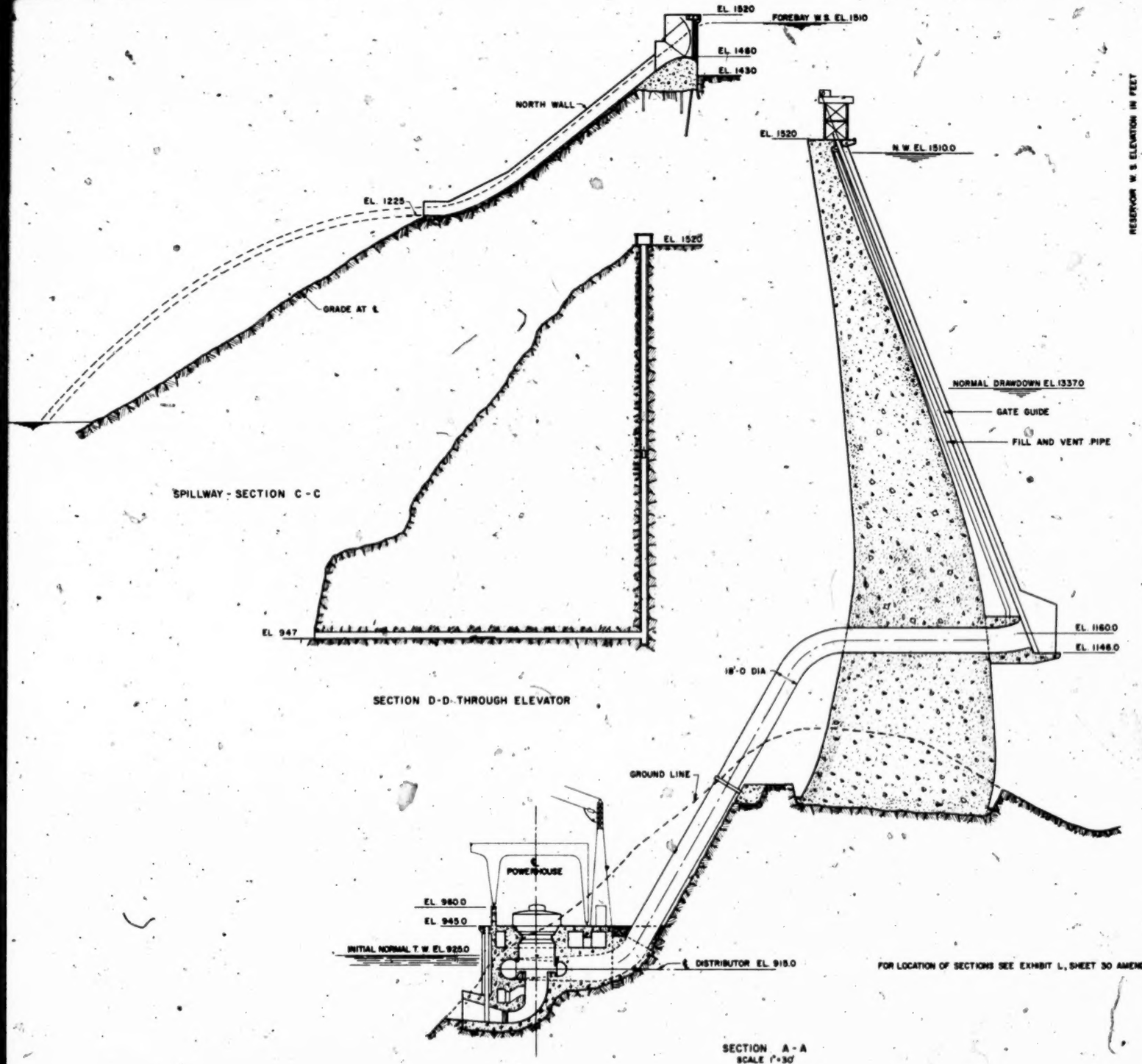
EQUIPMENT

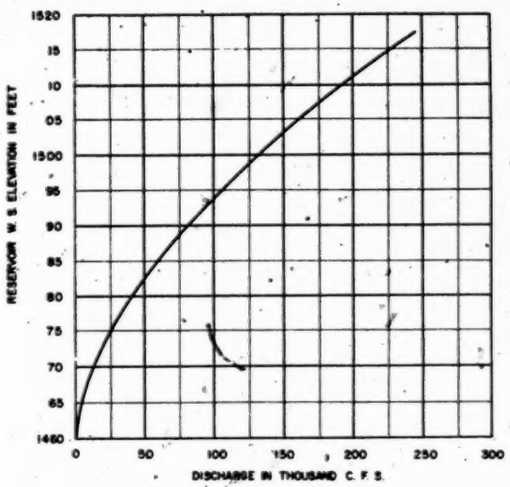
TURBINE: FIVE-285,000 H.P. AT 350 FT. NET HEAD, FULL GATE, 180 R.P.M.
GENERATOR: FIVE-175,000 K.W., 0.95 P.F., 3-PHASE, 60-CYCLE, MAXIMUM CAPABILITY 200,000 K.W.
MAIN TRANSFORMER: SIX SINGLE PHASE, 60-CYCLE, 13.8-345 K.V. 70,000 K.V.A., PLUS ONE SPARE
NINE SINGLE PHASE, 60-CYCLE, 13.8-230 K.V. 70,000 K.V.A., PLUS ONE SPARE
INTAKE GATES: FIXED WHEEL TYPE, 21 FT. WIDE BY 21 FT. HIGH, ONE FOR EACH PENSTOCK
DRAFT TUBE GATE: TWO SETS OF 3 GATES EACH, SLIDE TYPE, 16 FT. WIDE BY 13 FT. HIGH
MAIN GANTRY CRANE: ONE FOR EACH POWER HOUSE, 700/25 TON CAPACITY
INTAKE-GATE HOIST: ONE FOR EACH GATE, 300 TON CAPACITY

PROJECT № 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
POWER HOUSE CROSS SECTIONS
SCALE 1"=10'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

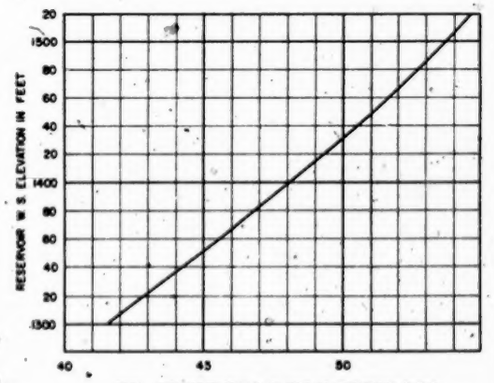
February 1960

G-183908





SPILLWAY DISCHARGE CURVE



SLUICE RATING CURVE

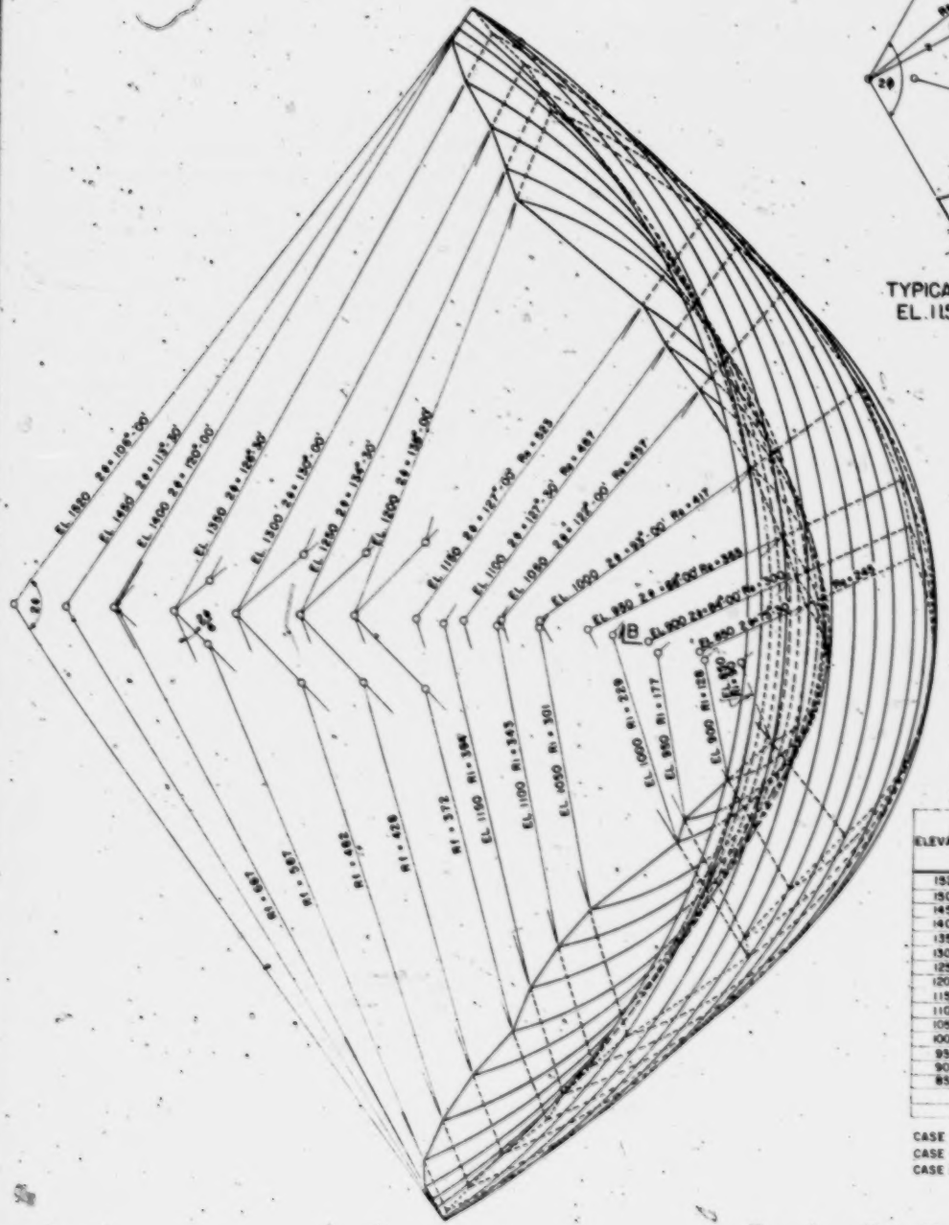
EXHIBIT L
SHEET 34 AMENDED
(REVISED)

60' 0' 60' 120' 180' 240' 300'
SCALE 1"=60'

PROJECT Nº 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H. E. DEVELOPMENT
INTAKE AND SPILLWAY SECTIONS
SCALE: 1"=60' UNLESS NOTED
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

February 1960

G-163909


EL. 1520 2θ = 106°-00'
EL. 1450 2θ = 113°-30'
EL. 1400 2θ = 118°-00'
EL. 1350 2θ = 122°-30'
EL. 1300 2θ = 126°-00'
EL. 1250 2θ = 129°-30'
EL. 1200 2θ = 132°-00'
EL. 1150 2θ = 134°-00'
EL. 1100 2θ = 135°-30'
EL. 1050 2θ = 137°-00' Rs = 523
EL. 1000 2θ = 137°-30' Rs = 487
EL. 950 2θ = 137°-00' Rs = 417
EL. 900 2θ = 135°-30' Rs = 383
EL. 850 2θ = 134°-00' Rs = 349
EL. 800 2θ = 132°-30' Rs = 317
EL. 1520 R1 = 789
EL. 1450 R1 = 748
EL. 1400 R1 = 714
EL. 1350 R1 = 686
EL. 1300 R1 = 617
EL. 1250 R1 = 568
EL. 1200 R1 = 523
EL. 1150 R1 = 485
EL. 1100 R1 = 455
EL. 1050 R1 = 431
EL. 1000 R1 = 372
EL. 950 R1 = 339
EL. 900 R1 = 301
EL. 850 R1 = 267
EL. 800 R1 = 239
EL. 750 R1 = 213
EL. 700 R1 = 177
EL. 650 R1 = 128
EL. 600 R1 = 128
B
B

2θ
R1
R2
R3
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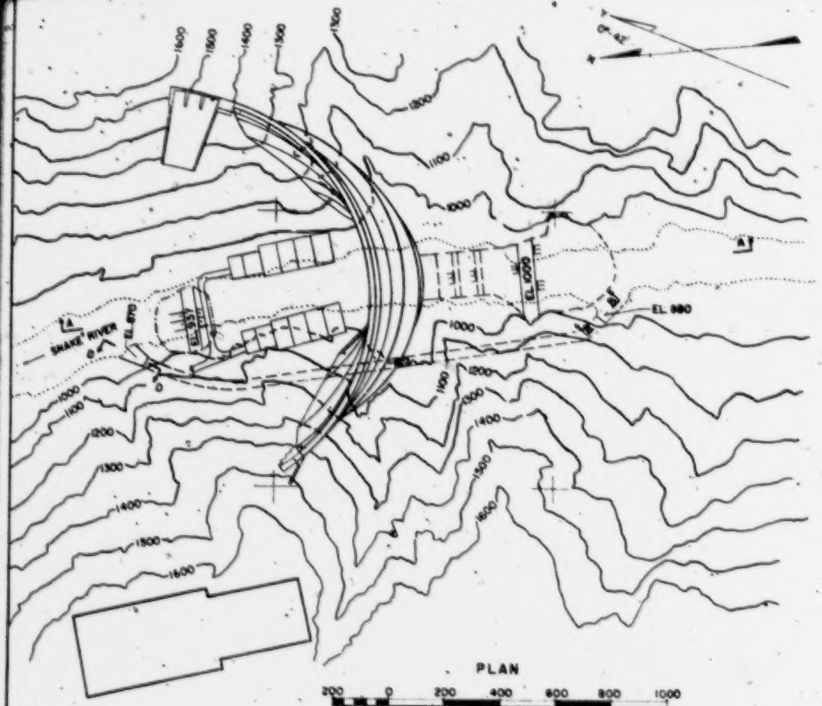
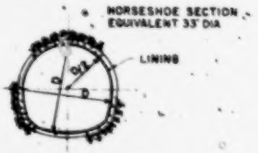
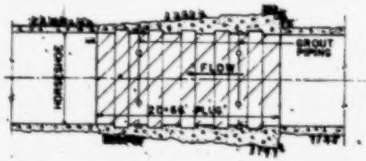
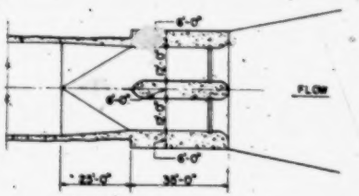
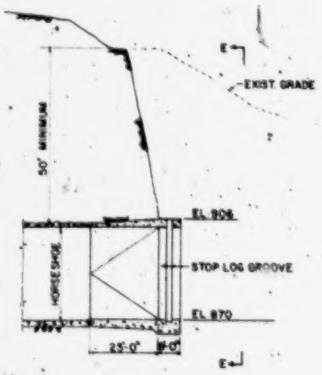
R40

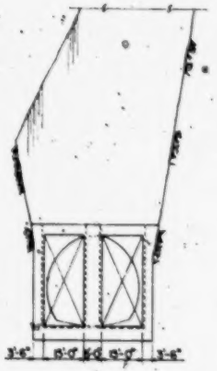


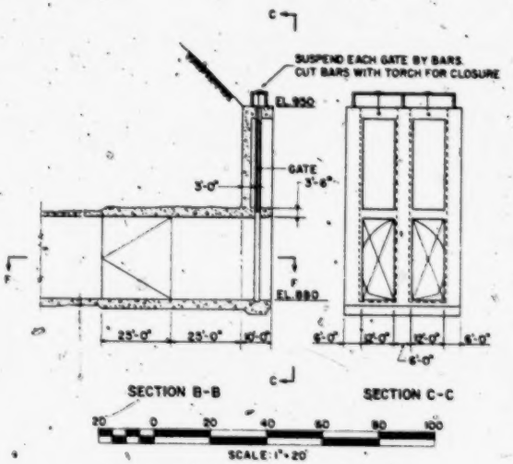


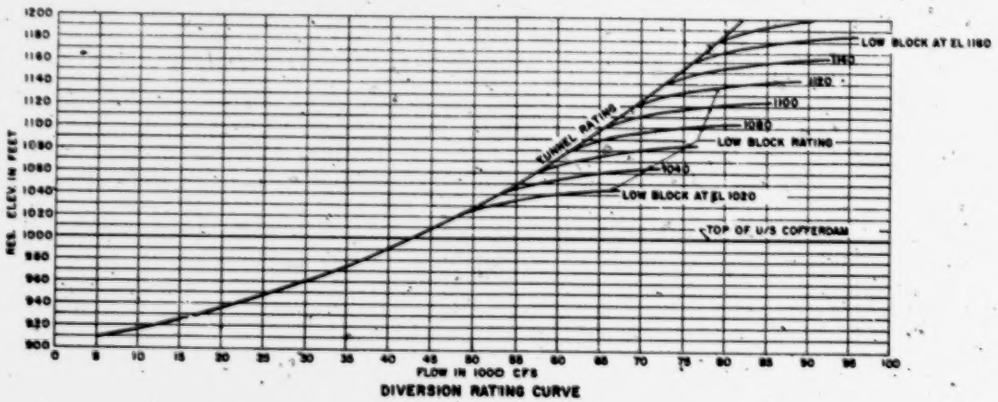


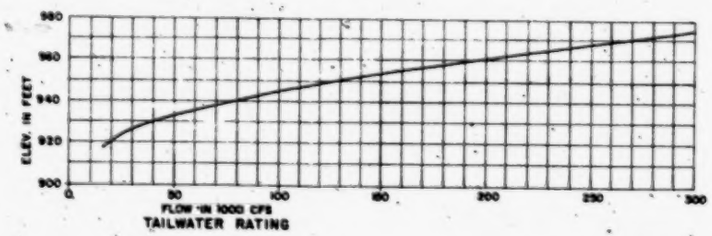






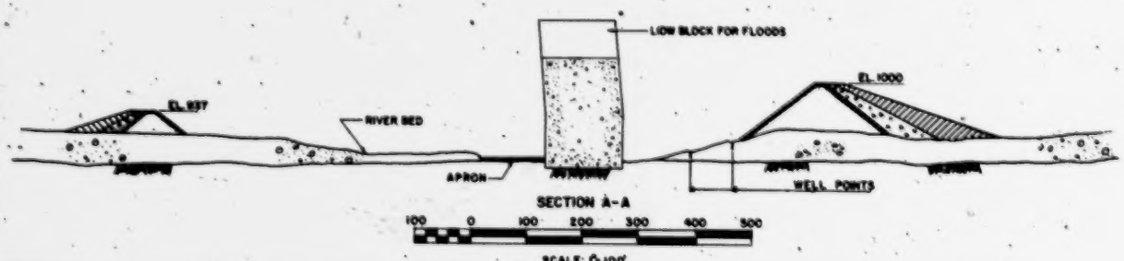






TAKEN FROM INTERIM REPORT NO. 4 12-22-47
MOUNTAIN SHEEP DAM
PORTLAND DISTRICT CORPS OF ENGINEERS

EXHIBIT L
SHEET 38 AMENDED
(REVISED)



PROJECT Nº 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
DIVERSION FACILITIES
SCALE: 1" = 20' UNLESS NOTED
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

February, 1950

TABLE 9
NEZ PERCE PLAN POWER PRODUCTION DATA
1975 SYSTEM

Line	Project	Usable Storage 1000 AF	25 Mo. Avg. Prime Energy MW	25 Mo. Max. Mo. Output MW	Avg. Annual Energy Gener. MW	No. of Units	Plant Name-plate Rating MW	Max. Plant Capability MW	Jan. 1932 Plant Peak Capability MW
1.	Libby	5,010	231.8	388	222.6	6	456	594	266
2.	Kootenai Storage	680 1/	-	-	-	-	-	-	-
3.	Hungry Horse	2,980	124.9	288	96.4	4	285	328	163
4.	Flathead Lake (Kerr)	1,215	113.6	178	117.0	3	172	185	178
5.	Thompson Falls	Pondage	45.5	66	46.9	10	67	75	75
6.	Noxon Rapids	do	152.2	309	197.8	4	400	400	400
7.	Cabinet Gorge	do	96.6	199	121.6	4	200	230	230
8.	Albeni Falls	1,153	25.1	41	29.2	3	42.6	49	31
9.	Box Canyon	Pondage	46.6	65	44.4	4	60	69	69
10.	Boundary	do	316.2	514	384.2	6	540	621	621
11.	Grand Coulee	5,200	1,702.6	2,274	1823.7	18	1,944	2,282	1,996
12.	Chief Joseph	Pondage	913.1	1,219	1007.5	16	1,024	1,219	1,219
13.	Wells	do	356.7	451	390.7	8	392	451	451
14.	Rocky Reach	do	556.7	771	623.3	7	711	775	775
15.	Rock Island	do	189.3	205	185.2	10	180	205	205
16.	Wanapum	do	462.4	632	558.9	10	750	900	900
17.	Priest Rapids	do	446.4	608	540.3	10	785	870	870
18.	Brownlee	1,000	246.2	320	276.9	4	360	450	375
19.	Oxbow	Pondage	113.3	155	125.9	4	190	218	218
20.	Hells Canyon (Before Nez Perce)	do	199.0	271	221.4	4	348	400	400
21.	Bruces Eddy	1,433	149.4	263	163.3	3	240	276	231
22.	Second Group Plants	2/	2,062.0	2,670	2208.8	-	4,400 3/	4,860	4,434
23.	Sub-Total (lines 1-22)	18,671	8,549.6	-	9386.0	-	13,546.6	15,457	14,107
	NEZ PERCE PLAN								
24.	Nez Perce (Net)	5,015	888.8	1,365	978.0	11	1,815	2,090	1,470
25.	China Gardens	Pondage	125.2	181	129.7	3	195	225	225
26.	Sub-Total (lines 24,25)	5,015	1,014.0	-	1107.7	-	2,010	2,315	1,695
	DOWNSTREAM PLANTS								
27.	Asotin	Pondage	195.2	276	207.2	3	288	331	331
28.	Lower Granite	do	247.5	337	288.0	4	360	414	414
29.	Little Goose	do	250.5	345	292.1	4	360	414	414
30.	Lower Monumental	do	240.7	329	282.3	4	360	414	414
31.	Ice Harbor	do	240.7	330	282.2	4	360	414	414
32.	McNary	do	601.8	668	752.6	14	980	1,124	1,124
33.	John Day	do	889.3	1,027	1094.4	12	1,304.4	1,500	1,500
34.	The Dalles	do	717.6	840	896.5	14	1,119	1,283	1,283
35.	Bonneville	do	514.4	570	539.2	10	518.4	570	570
36.	Sub-Total (lines 27-35)	0	3,897.7	-	4634.5	-	5,649.8	6,464	6,464
37.	Total (lines 23, 26, 36)	23,686	13,461.3	-	15,128.2	-	21,206.4	24,236	22,266

Table 9

1/ Kootenai Storage in this system operated in interest of Canadian plants.
2/ Not readily available
3/ Not readily available, therefore estimated at 4400 MW

August 1, 1960

TABLE 18
HIGH MOUNTAIN SHEEP PLAN
1928-1948 POWER PRODUCTION SUMMARY
1975 SYSTEM

Projects	July	Aug	September 1-15	September 16-30	Oct	Nov	Dec	Jan	Feb	Mar	April 1-15	April 16-30	May	June	12 Mo. Average
Libby	240	179	222	231	287	303	354	270	267	139	102	123	153	140	222.6
Kootenai Storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hungry Horse	73	44	79	143	137	164	220	107	84	69	63	65	23	61	96.4
Kerr	116	51	56	94	129	148	144	122	114	92	90	117	165	145	117.0
Thompson Falls	52	28	27	38	50	57	54	48	47	45	51	54	49	48	46.9
Noxon Rapids	216	94	90	123	161	185	189	162	158	156	202	280	367	339	197.8
Cabinet Gorge	134	58	56	77	102	118	119	103	100	99	126	173	215	193	121.6
Albeni Falls	37	22	21	26	32	36	39	30	21	21	18	26	34	33	29.2
Box Canyon	45	32	32	40	48	54	55	55	47	48	52	55	35	26	44.4
Boundary	422	201	196	253	314	373	472	429	339	344	401	465	535	523	384.2
Grand Coulee	2207	2229	1897	1803	1656	1629	1696	1838	1768	1658	1566	1575	1764	2018	1823.7
Chief Joseph	1190	1166	958	909	841	830	873	963	975	989	999	1006	1164	1164	1007.5
Wells	447	442	378	359	332	329	342	378	382	387	392	398	445	441	390.7
Rocky Reach	750	717	583	561	522	517	542	592	597	602	606	607	728	733	623.3
Rock Island	168	197	197	193	182	181	186	196	196	197	193	193	177	154	185.2
Wanapum	783	618	483	465	435	433	458	498	496	502	527	533	718	762	558.9
Priest Rapids	755	601	469	452	421	420	444	484	482	487	505	511	688	734	540.3
Brownlee	215	208	257	256	267	295	337	300	286	287	304	308	253	312	276.9
Oxbow	87	84	104	104	109	122	145	141	147	157	166	162	188	134	125.9
Hells Canyon	132	130	168	175	189	213	255	247	258	277	295	285	206	220	215.7
High Mountain Sheep	432	521	714	668	575	593	739	707	796	846	810	717	435	433	627.5
Lower Canyon	403	218	204	292	424	562	588	537	433	221	189	250	303	385	378.5
China Garden	129	116	148	154	160	187	224	221	233	213	196	191	137	136	175.3
Asotin	149	128	166	174	184	219	259	257	270	256	242	239	185	171	207.4
Bruces Eddy	103	50	44	141	230	223	221	195	169	153	148	187	183	172	163.3
Lower Granite & Little Goose	433	318	373	425	480	562	655	644	676	699	753	764	724	627	581.4
Ice Harbor & Lower Monumental	420	308	360	411	464	543	637	624	657	681	738	752	712	616	565.9
McNary	975	697	582	582	572	610	677	706	719	740	788	823	939	1015	753.1
John Day	1367	1029	859	859	843	902	997	1040	1075	1118	1157	1216	1322	1404	1095.2
The Dalles	1137	827	692	689	678	730	814	849	877	913	947	1012	1100	1167	897.0
Bonneville	554	552	495	491	481	510	537	554	564	567	558	560	556	549	539.8
2nd Group Plants	1876	1515	1650	1923	2139	2558	2478	2694	2523	2443	2317	2240	2145	2069	2208.8
Total	16047	13380	12560	13111	13444	14606	15750	15991	15756	15406	15501	15887	16578	16924	15201.4

Table 18

Average Megawatts

August 1, 1960

TABLE 19
NEZ PERCE PLAN
1928-1948 POWER PRODUCTION SUMMARY
1975 SYSTEM

Projects	July	Aug	September 1-15	September 16-30	Oct	Nov	Dec	Jan	Feb	Mar	April 1-15	April 16-30	May	June	12 Mo. Average
Libby	240	179	222	231	287	303	354	270	267	139	102	123	153	140	222.6
Kootenai Storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hungry Horse	73	44	79	143	137	164	220	107	84	69	63	65	23	61	96.4
Kerr	116	51	56	94	129	148	144	122	114	92	90	117	165	145	117.0
Thompson Falls	52	28	27	38	50	57	54	48	47	45	51	54	49	48	46.9
Noxon Rapids	216	94	90	123	161	185	189	162	158	156	202	280	367	339	197.8
Cabinet Gorge	134	58	56	77	102	118	119	103	100	99	126	173	215	193	121.6
Albeni Falls	37	22	21	26	32	36	39	30	21	21	18	26	34	33	29.2
Box Canyon	45	32	32	40	48	54	55	55	47	48	52	55	35	26	44.4
Boundary	422	201	196	253	314	373	472	429	339	344	401	465	535	523	384.2
Grand Coulee	2207	2229	1897	1803	1656	1629	1696	1838	1768	1658	1566	1575	1764	2018	1823.7
Chief Joseph	1190	1166	958	909	841	830	873	963	975	989	999	1006	1164	1164	1007.5
Wells	447	442	378	359	332	329	342	378	382	387	392	398	445	441	390.7
Rocky Reach	750	717	583	561	522	517	542	592	597	602	606	607	728	733	623.3
Rock Island	168	197	197	193	182	181	186	196	196	197	193	193	177	154	185.2
Wanapum	783	618	483	465	435	433	458	498	496	502	527	533	718	762	558.9
Priest Rapids	755	601	469	452	421	420	444	484	482	487	505	511	688	734	540.3
Brownlee	215	208	257	256	267	295	337	300	286	287	304	308	253	312	276.9
Oxbow	87	84	104	104	109	122	145	141	147	157	166	162	118	134	125.9
Hells Canyon	132	129	163	168	183	213	255	247	258	277	295	287	209	235	216.1
Nez Perce	851	726	903	941	975	1127	1292	1198	1160	1022	920	909	731	882	983.3
China Gardens	98	84	105	111	117	138	166	162	171	159	147	142	104	105	129.7
Asotin	151	125	161	169	182	219	258	256	268	258	245	239	187	176	207.2
Bruces Eddy	103	50	43	141	230	223	221	195	169	153	148	187	183	172	163.3
Lower Granite & Little Goose	438	313	362	415	475	562	654	641	672	703	757	764	725	630	580.1
Ice Harbor & Lower Monumental	425	303	349	402	459	543	636	621	652	684	743	752	712	619	564.5
McNary	976	695	578	579	571	610	677	705	716	742	789	824	940	1015	752.6
John Day	1369	1026	853	854	840	902	996	1039	1071	1121	1161	1217	1322	1404	1094.4
The Dalles	1139	825	687	685	676	730	814	848	874	916	950	1013	1101	1167	896.5
Bonneville	554	550	492	488	479	510	537	554	564	567	558	560	556	549	539.2
2nd Group Plants	1876	1515	1650	1923	2139	2558	2478	2694	2523	2443	2316	2240	2145	2069	2208.8
Total	16049	13312	12451	13003	13351	14529	15653	15876	15604	15324	15392	15785	16546	16983	15128.2

Table 19

Average Megawatts

August 1, 1960

15135

Hearing Exhibit No. PNPC 19-A

U.S. ARMY ENGINEER DIVISION, NORTH PACIFIC
CORPS OF ENGINEERS
210 CUSTOM HOUSE
PORTLAND 9, OREGON

Symbol: NPDGH 5 January 1961

Filed with Exrs. Certification dated Oct. 8, 1962

Pacific Northwest Power Co.
P. O. Drawer 1445
Spokane 10, Washington

Washington Public Power Supply System
P. O. Box 672
Kennewick, Washington

Gentlemen:

The Federal Power Commission has requested that flood control benefits attributable to developments on the Middle Snake River, including the Canadian Storage proposal, be made available to you. This letter will furnish the requested flood control benefits, and the power data requested will be furnished by separate correspondence.

With Canadian and Libby storage, sufficient storage to reduce the maximum discharge of the 1894 flood to less than 800,000 cfs at The Dalles will be available, and all of the remaining benefits for reducing the maximum discharge of that flood to 800,000 cfs at The Dalles will have been earned by Canadian storage and the Libby project.

A table dated March 14, 1960 (Revised) was furnished the Pacific Northwest Power Company by letter dated 15 March 1960. Copy of this table is inclosed herewith. The benefits for both 1968 and 1985 in the columns headed "As

Page Tightly Bound

part of the storage required to reduce the 1894 flood at The Dalles to 800,000 cfs" should now be considered to be zero.

Storage in the Crevice project, with 2,300,000 acre-feet of usable storage as part of a system that would control to a maximum flow of 600,000 cfs at The Dalles, would not reduce the flood control benefits in either Lower Canyon or Nez Perce.

15136

The values shown in the right-hand column, headed "As part of the Major Water Plan 1985 Development," are confirmed.

Very truly yours,

S. M. LIPTON
S. M. Lipton
Colonel, Corps of Engineers
Deputy Division Engineer

1 Incl
Table dtd Mar 14, 60

Hearing Exhibit No. PNPC 19A

No. of Study	Project	Total usable storage	Conditions (1967 Prices)		
			As part of the storage required to reduce 1894 flood at The Dalles to 800,000 cfs Development for 1968		As part of the Major Water Plan 1985 Development[1]
A1	Considering Garden Valley constructed prior to High Mountain Sheep.				
	High Mountain Sheep	2,250,000	$1.49	$1.82	0.23
	Lower Canyon—				
	(Mile 3.7, pool 1595)	3,265,000	3.50	4.30	0.37
	Total	5,515,000	4.99	6.12	0.60
A1	Considering High Mountain Sheep constructed prior to Garden Valley.				
	High Mountain Sheep	2,250,000	1.84	2.26	0.24
	Lower Canyon—				
	(Mile 3.7, pool 1595)	3,265,000	3.50	4.30	0.37
	Total	5,515,000	5.34	6.56	0.61
A2	Considering Garden Valley constructed prior to High Mountain Sheep.				
	High Mountain Sheep	2,200,000	1.49	1.82	0.23
	Lower Canyon—				
	(Mile 0.5, pool 1575)	2,500,000	2.82	3.45	0.28
	Total	4,700,000	4.31	5.27	0.51
A2	Considering High Mountain Sheep constructed prior to Garden Valley.				
	High Mountain Sheep	2,200,000	1.84	2.26	0.24
	Lower Canyon—				
	(Mile 0.5, pool 1575)	2,500,000	2.82	3.45	0.28
	Total	4,700,000	4.66	5.71	0.52
B1	Considering Nez Perce constructed either before or after Garden Valley.				
	Nez Perce	5,015,000	5.30	6.50	0.56

[1] Reservoir added after achievement of goal to control 1894 flood to 800,000 cfs at The Dalles.

Mar 14, 1960 (Rev.)

15393

Hearing Exhibit No. PNPC 56

February 15, 1960

Filed with Exrs. Certification
dated Oct. 8, 1962

Mr. V. M. Cleaveland, Manager
Clark County PUD
P..O. Box 1626
Vancouver, Washington

Dear Vince:

It now appears quite obvious that a public agency filing on the Nez Perce has ample merit for consideration and will no doubt be given attention at the NHCA meeting next Wednesday. In view of your previous expressions of interest in a public agency filing on the Nez Perce, I am prompted to set fo h some thoughts with regard to the major problems which must be given early consideration with the hope that it will be of some assistance in bringing the problems into sharper focus.

In view of the national and regional interest in the basic issues which will be involved and since every public agency in the Bonneville service area has an economic interest in whatever action is taken, it is important that such a filing be in a manner which will encourage maximum support and participation to insure an equitable sharing of benefits and responsibility. For this reason, it would seem advisable to have the matter considered by an appraisal committee which would consist of representatives of municipals, cooperatives and PUDs in the States of Oregon, Washington, Idaho and western Montana. It would seem that some such committee would be necessary in order to provide the leadership representative of each category and State to

effectively carry out a program of cooperation and participation necessary for the proper initial evaluation and for the ultimate success of such an undertaking.

The following are some of the problems which I think such a committee should appraise and take into account in the formulation of any policies and programs:

1. *Selection of a Public Agency Applicant*

Although it now seems quite obvious that a Joint Operating Agency is the best possibility for an applicant, this matter should be carefully reviewed in order not to overlook any other alternate which could better serve as an applicant.

15394

2. *Political Implications*

Solutions to the Middle Snake River problem are now deeply involved in political considerations. For this and other reasons, all members of the Northwest Congressional Delegation should be made aware of any contemplated public agency filing and the objectives, purposes and potential benefits made clear. Maximum support of such action should be solicited on a bi-partisan basis. In order to avoid confusion and minimize initial opposition, procedures should be agreed upon and carried out as promptly as possible.

3. *Legal*

In view of the lack of precedence for such action and the many "firsts" which will result, competent legal counsel at every step will be of great importance. The manner in which the legal problems are handled will determine to a great extent the final outcome. Use of legal talent presently available to the public agencies should be used to the maximum extent in the initial appraisal of the practical and

procedural problems as well as to anticipate and adequately meet all State and Federal requirements which must be satisfied.

4. *Initiating Action by Applicant*

Because of the status of the Mountain Sheep application, it is assumed that it would be necessary to forego the preliminary permit sequence and make application for a license in competition with the present applicant. The preparation of an incomplete license based upon the Corps of Engineers designs and information could be prepared within a very short time with a minimum of engineering and legal assistance. An incomplete application would require enough information to permit the FPC to give public notice of such an application. Answer to the notice would reveal the number and identity of interveners to the application. It would be anticipated that the completion of the application would be undertaken after the acceptance or rejection of the incomplete application. The submission of the incomplete application should not involve an expenditure of more than two or three thousand dollars. The complete application would require the assistance of competent engineering talent and an appraisal report would be necessary and among other things would indicate the order of magnitude of costs which would be incurred prior to the receipt of a license. In the event it is determined that an application for preliminary permit is in order, it would involve about the same time and cost as an incomplete license application. The advantage would lie in the additional time it would "buy."

5. *Hearings*

It would be expected that extensive hearings before FPC and the Oregon Water Resources Board and possibly others would be held. It is possible that the Nez Perce and the Mountain Sheep hearing would be

joined. It can be anticipated that these hearings would be very time consuming and costly and will constitute the principal cost item to be anticipated prior to the issuance or denial of a license.

6. *Engineering*

Although an incomplete license or preliminary permit application could be prepared and submitted without the selection of an engineering firm, it would be advisable to make such arrangements for engineering responsibility on a provisional basis in order to have continuity of engineering representation beginning with the submission of the incomplete application or permit. Since this project will be a major engineering project in the field of dam construction in the United States, the applicant would be expected to select an engineering firm of nationally recognized competence and reputation.

7. *Fish Problems*

Since the effect of the project on the salmon runs up the Salmon River will be the major controversy, the basic premises on which it is proposed to handle this problem should be spelled out and endorsed by all participants. The drafting of such a program will require the services and counsel of competent experts in this field in order to insure a technically and economically sound program.

8. *Organization*

The policy and administartive organization to handle a project of this magnitude will be of concern to the applicant and to participating organizations. In addition to the organizational problems presented to the applicant, of equal importance, will be the means of effective and practical liaison between the applicant and all other public agencies.

(15395)

9. *Public Relations and Information*

Of special concern, due to the controversial nature of the project and its sponsorship, special attention will be required in the matters of public relations and information. In addition, the matter of communications between the applicant and other public agencies will require immediate and continuing attention.

10. *Financial*

The financial requirements can probably be broken down into three broad phases:

Phase 1—This phase would include preparation of the incomplete application, the completion of the application, hearings, possible court actions and all other activities necessary and required to insure the receipt of a license from the Federal Power Commission.

15396

Phase 2—This phase would include final design, preparation of bid documents, marketing feasibility studies, negotiation of power sales contracts and equipment and construction bidding.

Phase 3—This phase would include the sale of bonds, construction and bringing the project into production.

Estimates of funds required for each phase and the evaluation of the risk involved at each stage would be essential before any commitments could be considered or expected.

11. *Time Schedule*

The Mountain Sheep applicant will expedite in every way possible its license application and could receive a license in early 1961. In view of the NHCA intervention situation

and to insure recognition and acceptance of a public agency filing, the application should be filed as promptly as possible. FPC would no doubt require the completion of the application as promptly as possible. On these assumptions and considerable guessing, a tentative schedule might be as follows:

Incomplete license application filing—within the next two or three months

Completion of application—by January 1961

Start of hearings—June 1961

Completion of hearings—June 1962

Issuance of license—January 1963

Completion of engineering—June 1963

Sale of bonds—January 1964

Construction completion—1968-69

12. *Cost of Power and Marketing Feasibility*

This item should probably be first rather than last since the cost of power and marketing feasibility will be of primary concern to anyone considering the expenditure of risk capital of the magnitude which would be involved in such a project. It would seem however that adequate information is available to support the assumption that the Nez Perce Project is the most attractive source of hydroelectric power remaining in the Northwest. Present loads and resources estimates amply support

the conclusion that the output of this project can be utilized to supply the Northwest power deficits which occur after 1967 and public agency needs in the 1970's. An appraisal report confirming these assumptions by a competent analyst

would of course be necessary before any substantial amount of money is spent or commitments could be expected.

No doubt there are other major items which could be added to the above list. However, these are ones which have occurred to me since our conversation regarding the public agency filing at Lewiston.

Above all, it seems apparent that the most important need is for an aggressive, informed and cooperative leadership from the Co-ops, Municipals and PUDs of all areas which is able to bring a maximum of participation and unity by public agencies and their supporters together in this effort and to sustain it over a long period of time.

Your reaction and criticism to this general approach and analysis will be very welcome and I will expect to discuss these matters with you while in Portland attending the meeting next Wednesday.

Very truly yours,

OWEN W. HURD
Managing Director

OWH:cs

cc: Hank Alderman
Dean Barline
Ken Billington
Grover C. Greines
Ivan Laird
Dr. Paul Raver

15398

Hearing Exhibit No. PNPC 57

March 5, 1960

Filed with Exrs. Certification
dated Oct. 8, 1962

Mr. V. M. Cleaveland, Manager
Clark County PUD
Box 1626
Vancouver, Washington

Dear Vince:

This is a follow-up on our conversation today. If my replies and comments during our conversation appeared to be evasive, it was simply because Keith Willey of Harza Engineering Company was sitting across from me at the time I talked to you. Since he is leaving tonight for Washington, I called and asked that he come down and discuss a proposed contract and interim arrangement which could be worked out in view of the circumstances facing us.

We went over the contract in detail making such adjustments and changes as necessary in order to adapt itself to the Nez Perce Project and the division of responsibility on engineering phases between Harza, Beck and others. I am sure that this will result in a more appropriate arrangement than contained in the Grant County agreement.

Also, I brought up the suggestion you made with regard to the fee based upon project costs. They have recognized the owner's objection to such an arrangement and for that reason have developed a schedule of charges which is based upon a cost plus percentage of the cost for overhead and other direct costs. Enclosed is a copy of the form that is now generally in use and which apparently has been recommended by the engineering fraternity.

(15398)

In the event that Kirby calls or I hear from the Stone & Webster Company, I will endeavor to get a comparable proposal from that organization. Also, it is my desire to have Calvin Davis, President of the Harza Engineering Company and Keith Willey at our Board meeting in April. Likewise, I would expect to have the principals of any other engineering firm from whom we might accept a proposal.

Now with regard to your trip east and contacts with Alex and Mrs. Cooper—I would like to summarize my thoughts as follows. Our basic approach before the Federal Power Commission was to present in the most favorable light as possible and in the most effective manner as possible the merits of our application and the Nez Perce Project. We should participate in the Company's presentation the direct case on the High Mountain Sheep with the view of making the record as clear and as complete

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as possible in order to make the most favorable comparison in behalf of the Nez Perce Project. We should not use our position to delay or challenge the Company's presentation beyond that necessary to clearly establish the merits of the Nez Perce Project. As far as our filing is concerned, our objective is to present a positive case for the Nez Perce Project and secure its construction as early as possible by our agency.

At the present time I would expect that FPC would allow the Company to put on its direct case and then recess for a period long enough for us to complete our application and prepare for our direct testimony and for the FPC staff to review our completed application and make the necessary analysis. It was Keith Willey's thought that this might require a recess of approximately six months—three months to complete our application and 3 months for the staff analysis.

ightly Bound

While the license was being completed from an engineering and economic standpoint, we would develop a program for insuring testimony by witnesses which would place the fish problem in a light favorable to the early construction of the Nez Perce Project. At the moment, I have no specific recommendations to make but feel the urgent need to get competent help on a full-time basis to organize and plan our strategy with regard to fish problems. I believe that the key to the situation will be securing a trained and competent person to undertake studies, analyses, and making arrangements for supporting witnesses which will allow us to present a well rounded program considering economic, engineering, biological, disease, substitute production and all other facets of the fisheries program which will have an ultimate bearing on the decisions of FPC. This may be a rather visionary approach, but I am sure it is one which would be most effective if we can find the right person. I now intend to talk to Dean Barline with the idea of exploring the possibilities of getting the Scripps Institute of LaJolla, California to see if they supply the general overall technical assistance and "know how" from their organization or associates. If this proves to be a promising approach, I may go to LaJolla before going to Washington.

As far as I can see now, there is no pressing need to consummate any arrangements with Alex Radin regarding use of his personnel on a part time basis. I recognize that Alex and his staff can render a great deal of assistance. However, there appears at present to be no need for making arrangements similar to those which were applicable in connection with the TVA Self-Financing Bill. As far as WPPSS is concerned, our sole objective is to obtain a license from the Federal Power Commission and not in promoting any particular legislation in Congress. The responsibility for legislation should be the concern and responsibility of others such as the National Hells Canyon

Association, PUD Association, Northwest Public Power Association, APPA and other groups. We will, of course, welcome any success that is achieved in this direction in securing federal development or by otherwise blocking the Middle Snake development by the private utility companies.

15400

We expect to have Beck, Harza and others assist in the preparation of an appraisal report of the Nez Perce Project which will be of assistance in our license application, for the benefit of our own members and contacts with non-member public agencies and industry. You might keep this in mind in your conversation with Wally and if there is any particular facet of economic analysis that would be of particular interest to him, we would be only too glad to include it in our plans. It would be a great boost to have an expression of interest in a long-time contract by Alcoa and an even greater boost to have them offer to provide some of the capital necessary to bring the project to the revenue bond sales status. My best wishes are with you in your contact with Wally.

With best personal regards.

Very truly yours,

OWEN W. HURD
Managing Director

OWH:cs

15411

Hearing Exhibit No. PNPC 64

MIDDLE SNAKE RIVER

COMPARISON OF DEVELOPMENTS

Maximum Outputs based on WPPSS Plant Capabilities

Line	Project	Reservoir Elevation	Maximum Plant Output—kw: Nez Perce Plan	Maximum Plant Output—kw: High Mountain Sheep Plan
	(1)	(2)	(3)	(4)
(1)	China Gardens	905	193,545 (A)	—
(2)	China Gardens	925	—	256,444 (B)
(3)	Nez Perce	1510	2,235,000 (C)	—
(4)	High Mountain Sheep	1510	—	1,302,000 (D)
(5)	Lower Canyon (Mile 0.5)	1575	—	972,000 (E)
(6)	Whitebird	1575 (F) (1570)	64,000 (F)	—
	Total		2,492,545 kw	2,530,444 kw

(A) 170,000 kw x 1.15 x .99 = 193,545 kw; 170,000 kw by Willey (WPPSS Exh. 20, Sheets 1 & 18)

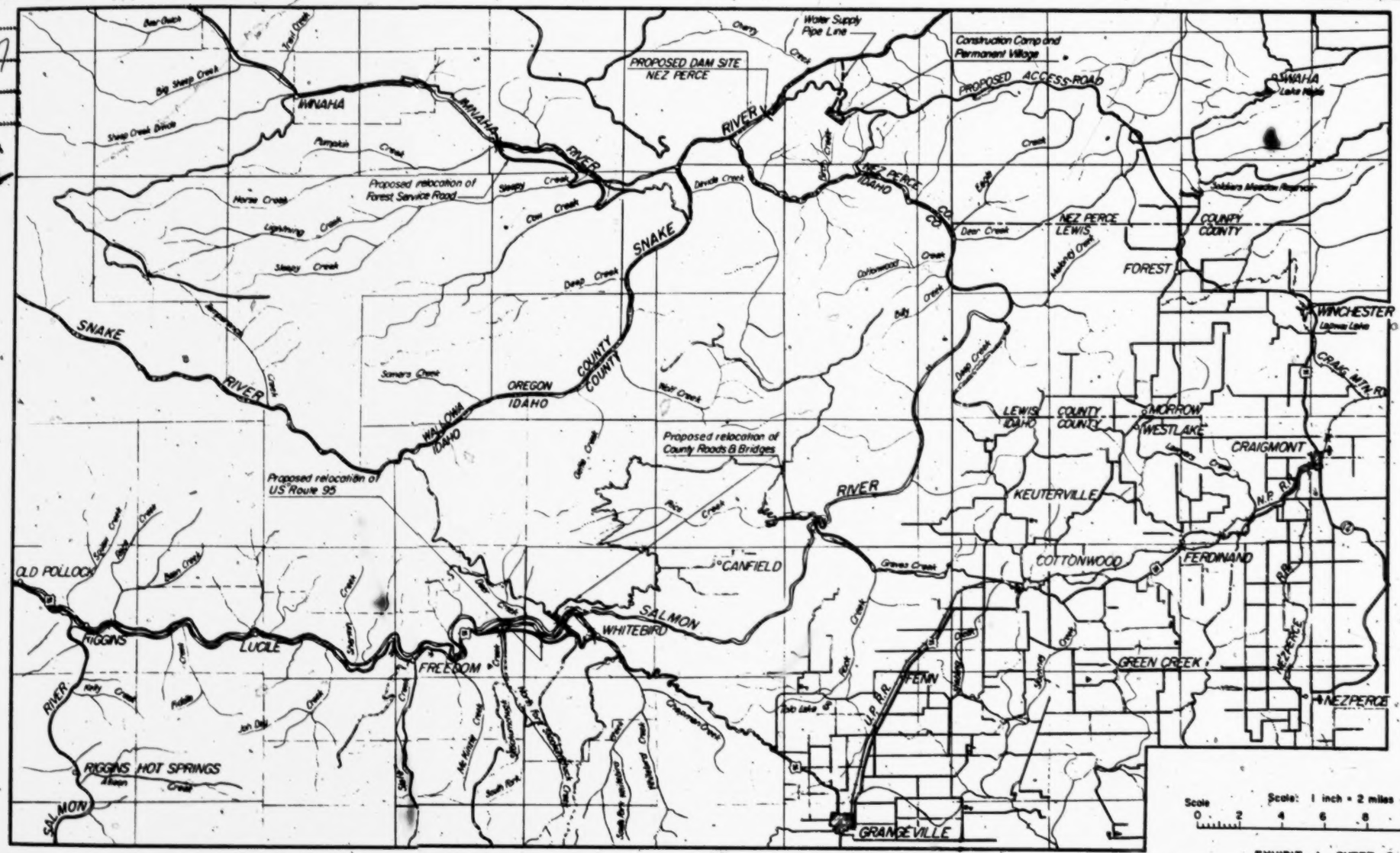
(B) 205,000 kw x 1.15 x .99 = 233,393 kw; 205,000 kw by Willey (WPPSS Exh. 20; Sheets 1 & 18)
Willey testimony (Tr. 5479, lines 8-19) that 233,393 should be increased roughly 10% to make it truly comparable because of ratio of hydraulic capacities; 233,393 x 44,500/40,500 = 256,444; (hydraulic capacities from Willey testimony, Tr. 5295, lines 17-19)

(C) Willey testimony (Tr. 5376, lines 11-19 & Tr. 462, line 9)

(D) 217,000 kw x 6 = 1,302,000 kw; 217,000 kw by Willey (Tr. 5386, line 16)

(E) 243,000 kw x 4 = 972,000 kw; 243,000 kw by Willey (Tr. 5387, line 7)

(F) Willey testimony (Tr. 5430, line 2) indicates that only 57,000 kw could be obtained; to be comparable, this should be increased by 7000 kw to reflect a Whitebird pool level of 1575 instead of 1570 (Willey—Tr. 5483, lines 22-25)



LEGEND

- US Route 95
- County Roads
- Forest Service Roads
- Access Road & Relocations

CERTIFICATE

This drawing is part of the amendment to application for license, Project 2273, made by the Undersigned this day of

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Attest

By Grover C. Greimes, President

W T Elmgren, Secretary

EXHIBIT J SHEET 2

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RICHLAND, WASHINGTON

NEZ PERCE PROJECT
LOCATION MAP
ACCESS ROAD AND RELOCATIONS

WPPSS EXHIBIT NO.17
Sheet 1 of 1
C.K.Willey

15828

Hearing Exhibit No. WPPSS 84

Filed with Exrs. Certification
dated Oct. 8, 1962

PACIFIC NORTHWEST POWER COMPANY
P. O. DRAWER 1445
SPOKANE 10, WASHINGTON

AIR MAIL March 27, 1957

Ebasco Services, Incorporated
Two Rector Street
New York 6, N. Y.

Attention: Mr. Charles C. Bonin, Engineering Manager

Gentlemen:

I am hereby confirming authorization which was given to Mr. Bonin on March 25th by telephone to proceed with reconnaissance type designs and construction cost estimates for dams and power plants at the following sites:

1. Mountain Sheep No. 1 (normal pool elevation 1490 feet) between the Imnaha and Salmon Rivers on the Snake River.
2. High Lower Canyon (normal pool elevation 1575 feet) near the mouth of the Salmon River.
3. Nez Perce (normal pool elevation 1490 feet) below the mouth of the Salmon River on the Snake River.

Pertinent data on these projects are given on Table II attached hereto. If you are not in full agreement with the bases used to derive thse figures, we would appreciate your comment. The estimated sizing of the units was based on a very rough approximation of one piece turbine-runner limitations as used by Ebasco on the High Pleasant Valley

estimate (1700 feet) and discussed by Charles C. Bonin and A. B. Martin. These should be changed, of course, if the sizes indicated are impractical.

As discussed with Mr. Gil Hunt and Mr. Bonin, we want designs and estimates based on what is now known about these sites (plus a brief location inspection by Chas. Stuber and Portland Fox) which will serve to evaluate their potentialities at the lowest reasonable cost to us. We expect the conclusions of these studies to be consistent with future more complete preliminary designs and estimates which might be made, assuming that drilling and detailed geological work which would then be required does not develop adverse features not now discernable.

15829

The budget for these studies has been tabulated below. If you can accomplish your part of the job for less than your $12,000 estimate and still obtain the quality of report we need, it will be appreciated.

TABLE I

BUDGETED EXPENDITURES

Item	Mt. Sheep #1 (1490')	Hi Lower Canyon (1575')	Nez Perce (1490')	Total
Field Examination				
Engineers	$ 500	$ 600	$ 300	$ 1,400
Geologist	400	400	200	1,000
Design & Cost Estimates				
Ebasco	3,800	4,000	4,200	12,000
Power Studies				
Pacific Power & Light Co.	600	600	600	1,800
Transmission Studies				
Washington Water Power Co.	500	....	500	1,000
TOTAL	$5,800	$5,600	$5,800	$17,200

Timing of the studies is important and they should be completed in the order given on page 1 as soon as consistent with your regular working hours.

We have sent to you by air mail, special delivery, today a copy of the Corps of Engineers Interim Report #4 on The High Mountain Sheep Dam. The Corps will ship to you from Walla Walla full size prints of their Mt. Sheep topographic map and plant layout.

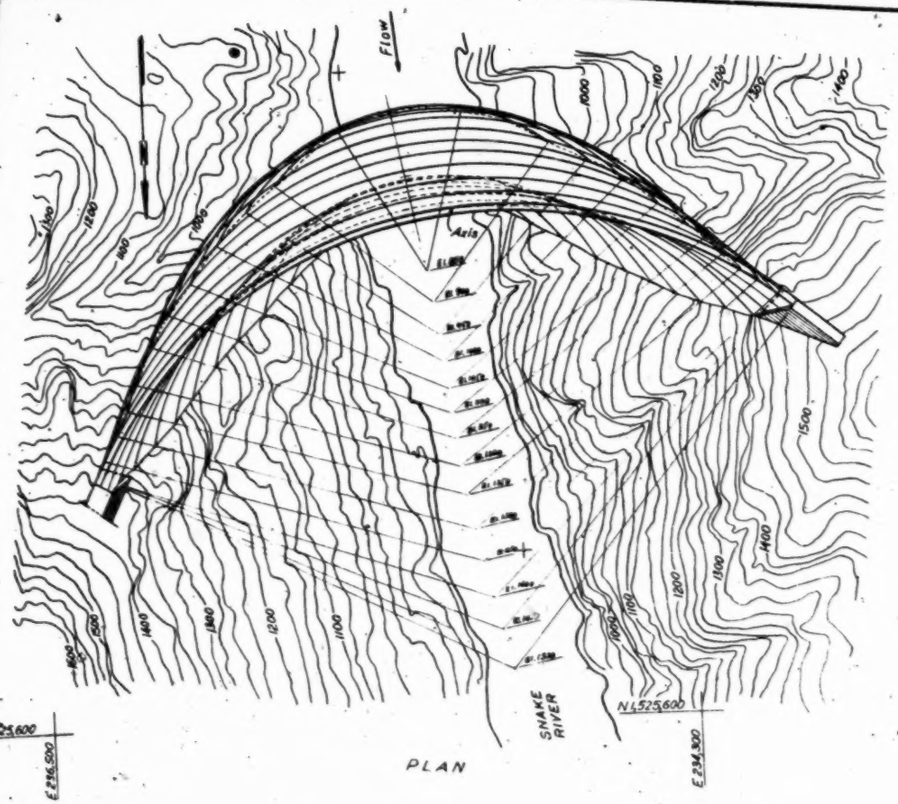
We have made tentative arrangements for transportation for the inspection trip to the sites by your engineer and geologist for Monday, April 1st.

For comparison purposes, we have tabulated comparative data for our present Mountain Sheep-Pleasant Valley Project 2173 and the projects to be studied in Table III attached hereto.

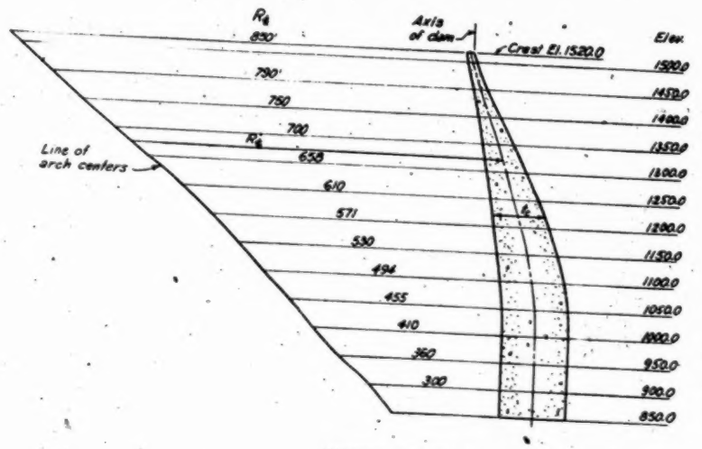
Very truly yours,

A. B. MARTIN
Management Coordinator

ABM:d
Attach.

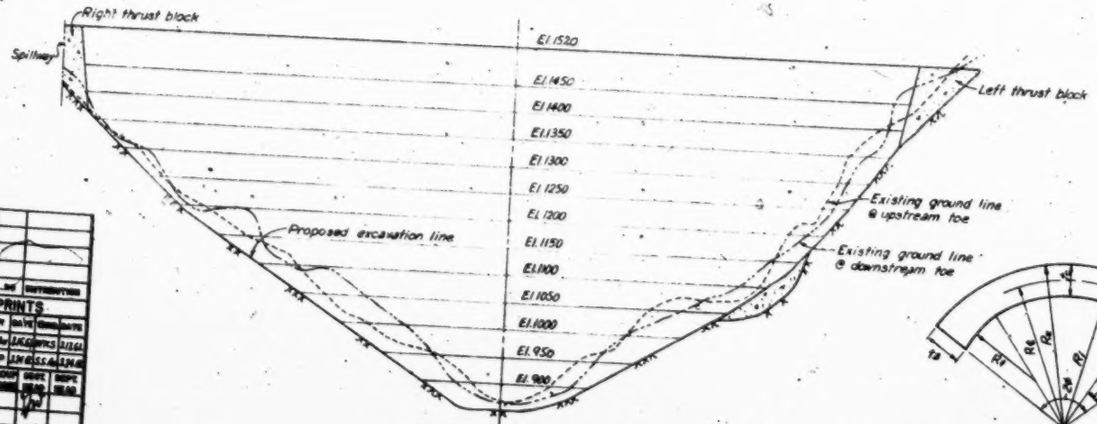


PLAN



CROWN CANTILEVER

Elev.	Arch Dimensions				Arch Stresses (psi)			
	t_c (ft)	t_a (ft)	2ϕ (degrees)	$\frac{t_c}{R_\phi}$	Crown		Abutment	
					Ext.	Int.	Int.	Ext.
1520	14	14	100	—	—	—	—	—
1500	16	16	105	0.019	240	220	260	200
1450	25	25	109.5	0.0317	930	744	1044	636
1400	41	43	117	0.055	1010	750	1033	683
1350	58	62	123	0.083	1025	673	1037	603
1300	74	82	124.5	0.112	1040	610	1010	582
1250	89	100	127	0.146	1025	533	1040	500
1200	103	116	127.5	0.181	1022	454	1000	470
1150	114	133	125	0.215	1025	378	1030	410
1100	125	149	122	0.253	1018	300	1026	358
1050	130	159	117	0.286	1020	207	1010	362
1000	130	163	108	0.317	1020	87	1010	278
950	130	162	98	0.360	925	-34	1035	165
900	130	157	89.5	0.434	730	-110	1025	39



DOWNSTREAM ELEVATION
(Developed along axis of dam)

FILLET DIMENSIONS
(Typical)

Scale: 1 inch = 100 feet

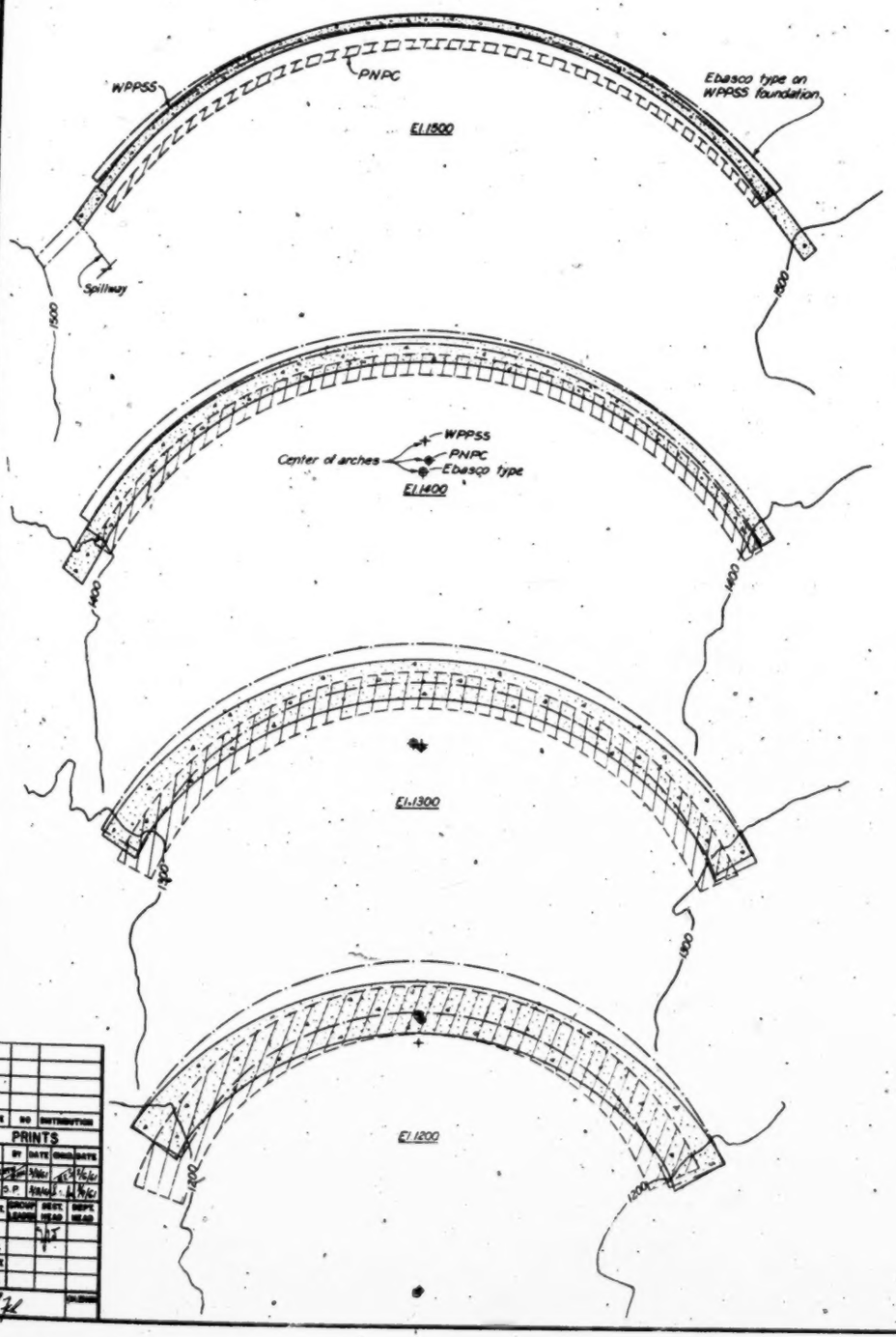
0 100 200 300 400 500 600 Feet

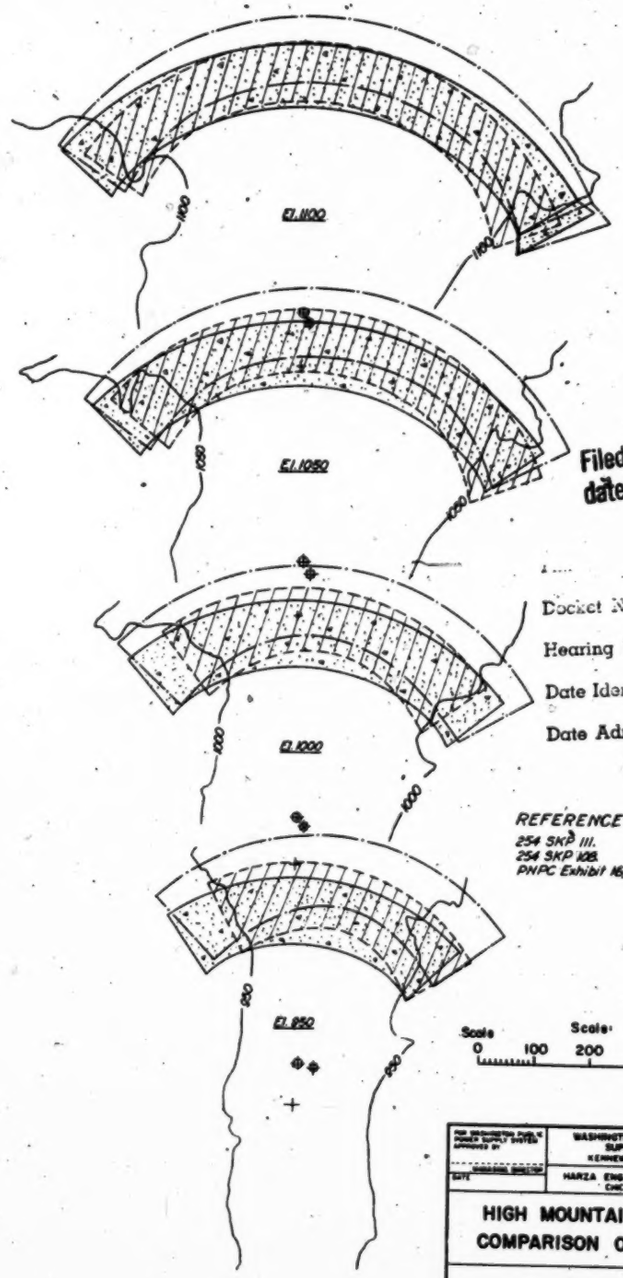
	WASHINGTON PUBLIC POWER SUPPLY SYSTEM KENNEWICK, WASHINGTON	
DATE	HARZA ENGINEERING COMPANY CHICAGO, ILLINOIS	J.A. Veltrop

HIGH MOUNTAIN SHEEP PROJECT
EBASCO TYPE ARCH DAM
ON WPPSS FOUNDATION LINES

WPPSS EXHIBIT NO. 246
Sheet 1 of 1
J.A. Veltrop

PRINTS





Filed with Exrs. on date OCT - 8 1962

Docket No. P-2243, Etal

Hearing Ex. No. WPPSS-249

Date Identified 7/13/61

Date Admitted 7/12/61

REFERENCE DRAWINGS:
254 SKP 111.
254 SKP 128.
PNPC Exhibit 16, Dwg. G-163910.

Scale: 1 inch = 100 feet

Scale 0 100 200 300 400 500 Feet 600

DATE	NO	DISTRIBUTION
		PRINTS

	BY	DATE	CHKD.	DATE
DESIGN				
DRWN.				
CHK.				
SPECS.				
ELECT.				
PLAN.				
STRUC.				

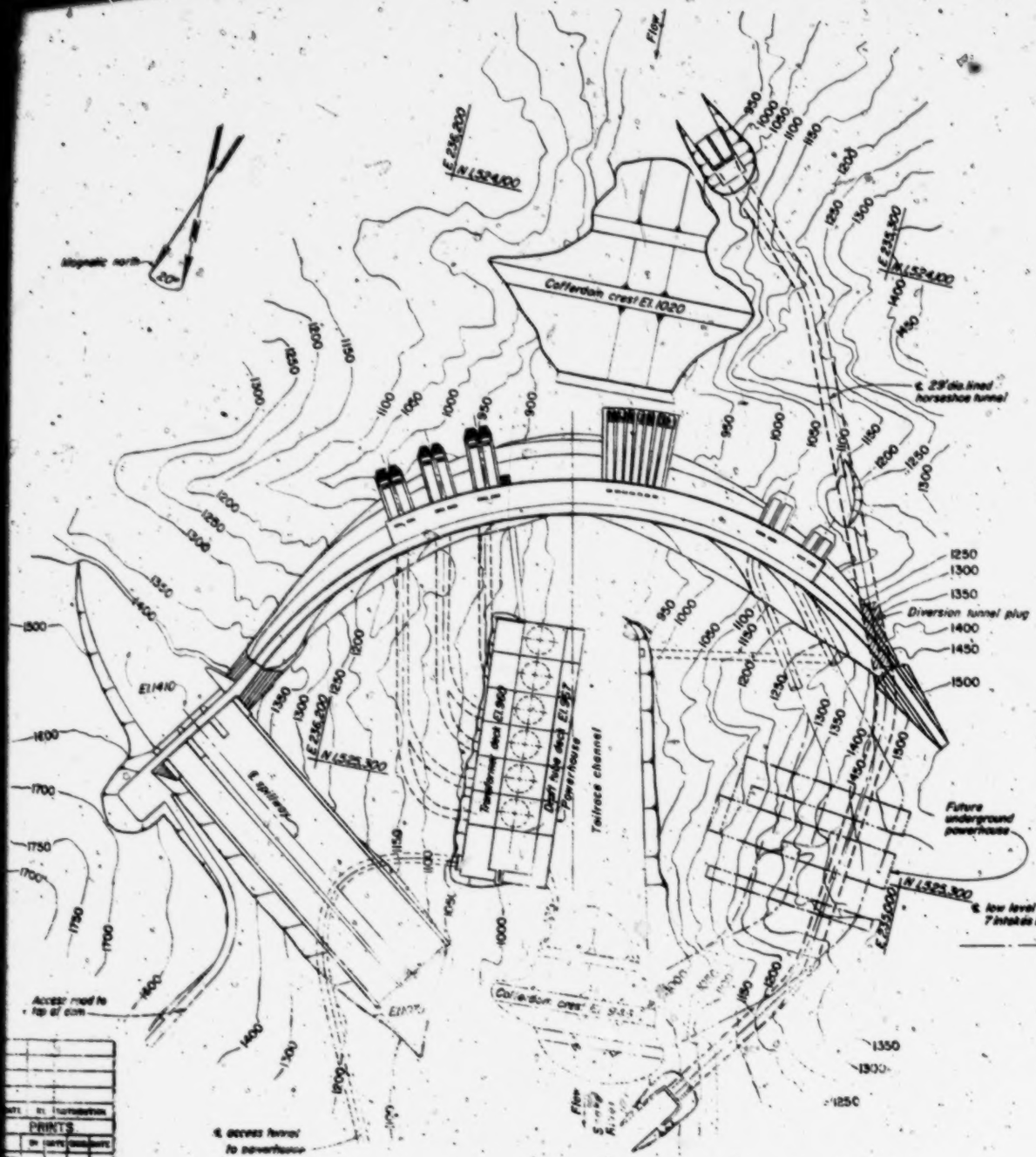
	GROUP LEADER	SECT. HEAD	DEPT. HEAD
CIVIL			
MECH.			
ELECT.			
PLAN.			
STRUC.			

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
KENNEWICK, WASHINGTON

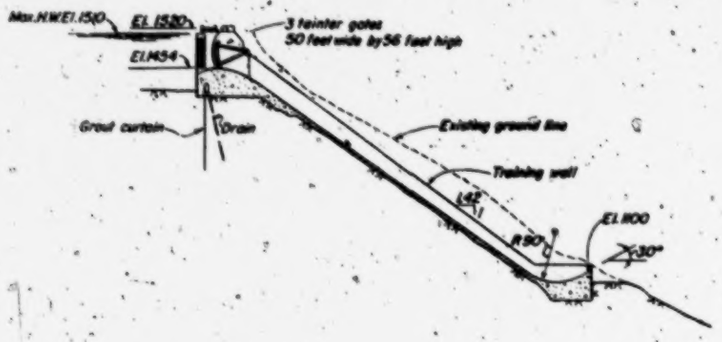
HARZA ENGINEERING COMPANY
CHICAGO, ILLINOIS

HIGH MOUNTAIN SHEEP PROJECT
COMPARISON OF ARCH SECTIONS

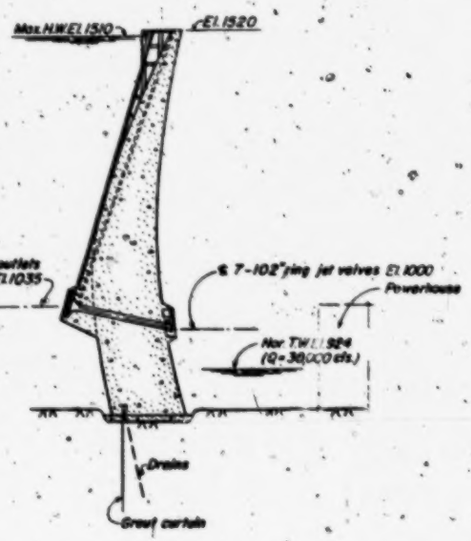
WPPSS EXHIBIT NO. 249
Sheet 1 of 1
J.A.Veltrop



GENERAL PLAN



SECTION THROUGH SPILLWAY



SECTION THROUGH LOW LEVEL OUTLETS

Filed with Exrs. Certification
dated OCT - 8 1962

FEDERAL POWER COMMISSION
Docket No. D-2243 etal
Hearing Ex. No. WPPSS-264
Date Identified 7/3/62
Date Admitted 7/24/62

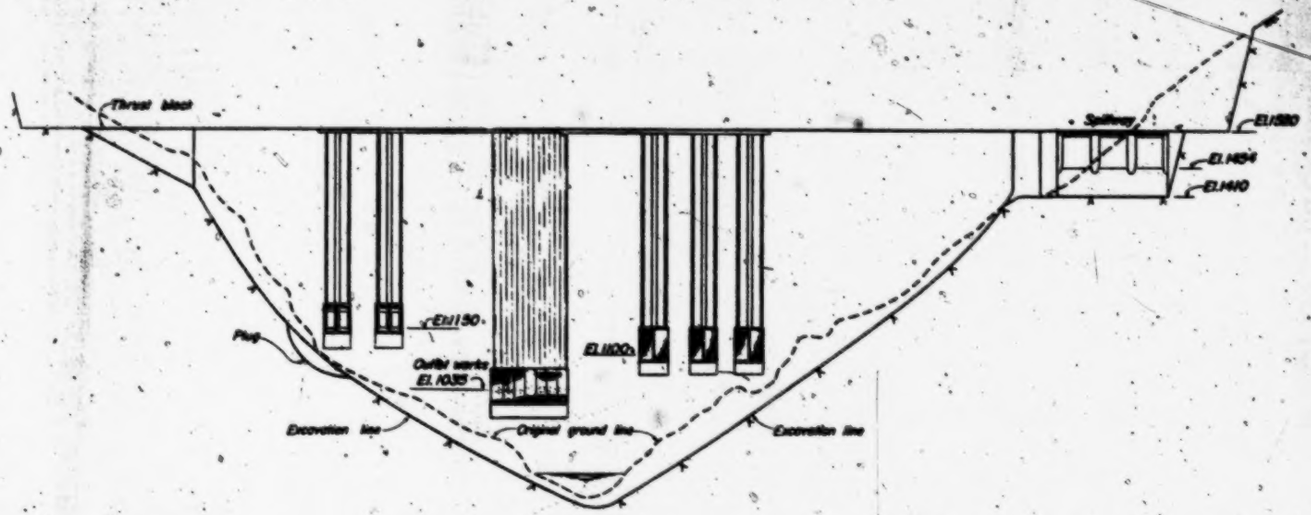
Scale: 1 inch = 100 feet

Scale						Feet
0	100	200	300	400	500	600

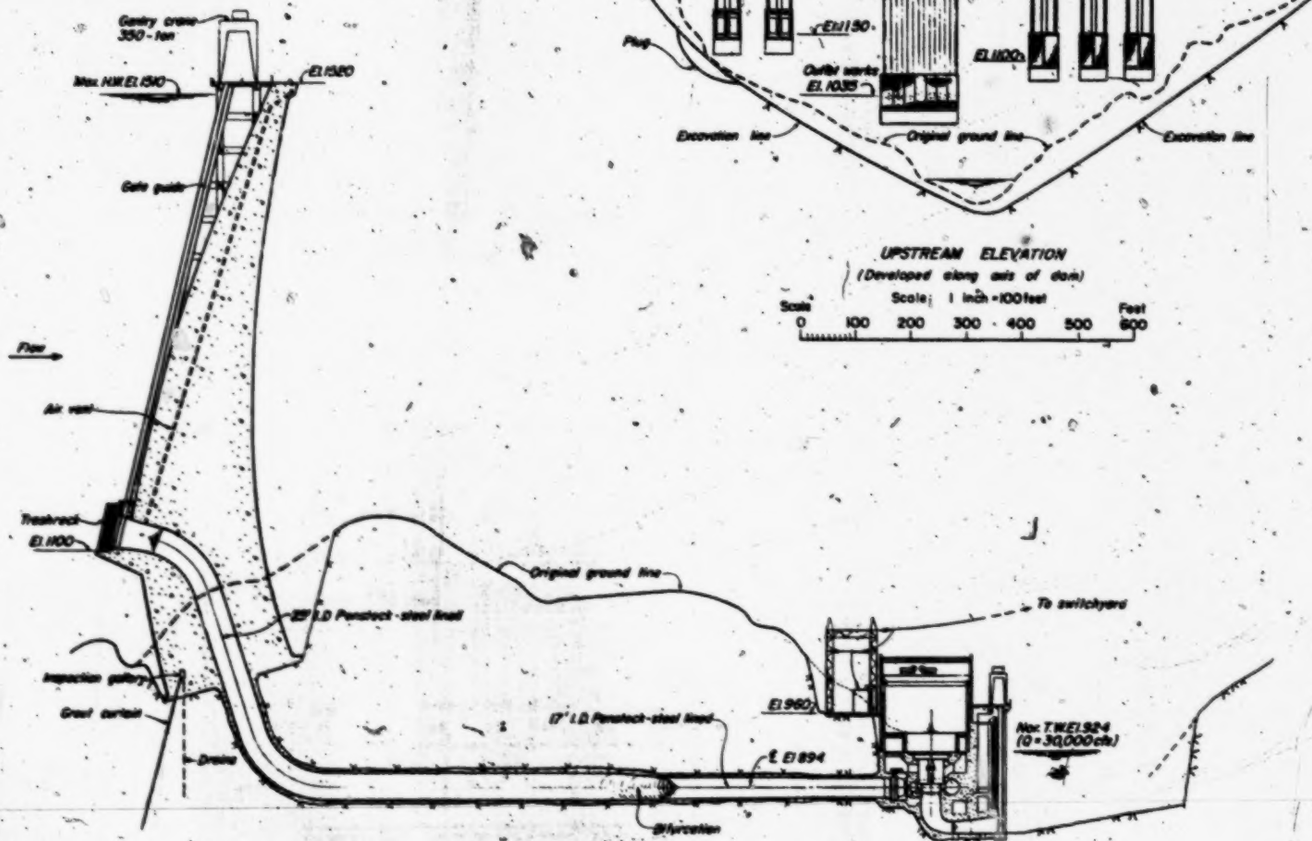
	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	
	MARIA ENGINEERING COMPANY	

HIGH MOUNTAIN SHEEP PROJECT
GENERAL PLAN AND SECTIONS

WPPSS EXHIBIT NO. 264
Sheet 1 of 1
J.R. Schultz and F.C. Rogers



UPSTREAM ELEVATION
(Developed along axis of dam)
Scale: 1 inch = 100 feet



SECTION THROUGH DAM AND POWERHOUSE

Filed with Exrs. Certification dated OCT - 8 1962

FEDERAL POWER COMMISSION.
Docket No. P-2243, et al
Hearing Ex. No. WPPSS-265
Date Identified 7/13/61
Date Admitted 7/24/61

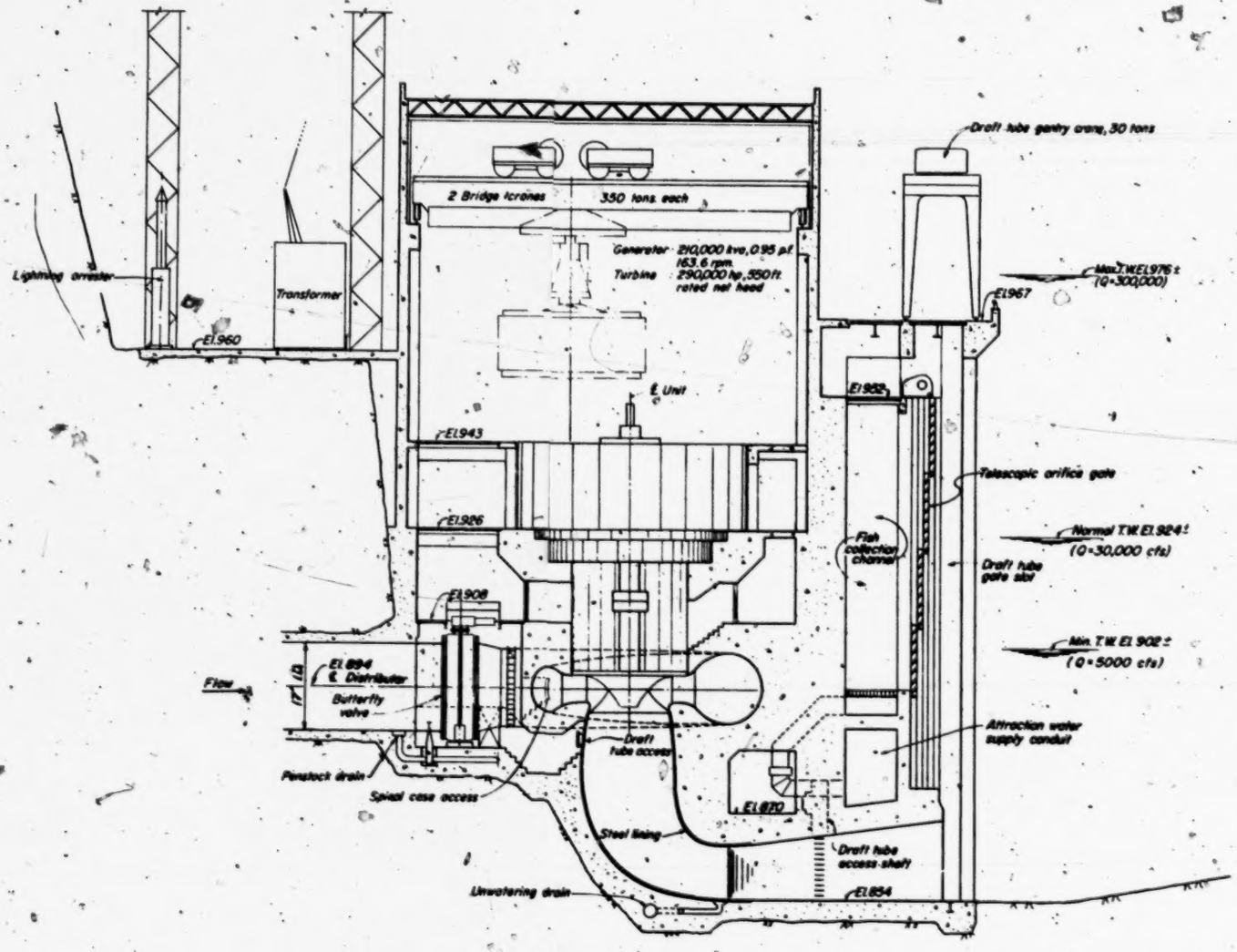
Scale: 1 inch = 50 feet
Scale: 0 50 100 150 200 250 300 Feet
Except as noted

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NORTHWEST, WASHINGTON

HARZA ENGINEERING COMPANY
CHICAGO, ILLINOIS

HIGH MOUNTAIN SHEEP PROJECT
ELEVATION OF DAM AND SECTIONS

WPPSS EXHIBIT NO. 265
Sheet 1 of 1
T. Zowski, C.E. Bouman and F.C. Regirs



Filed with Exrs. Certification dated OCT - 8 1962

FEDERAL POWER COMMISSION

Docket No. P-2243, et al

Hearing Ex. No. WPPSS-266

Date Identified 7/13/61

Date Admitted 7/24/61

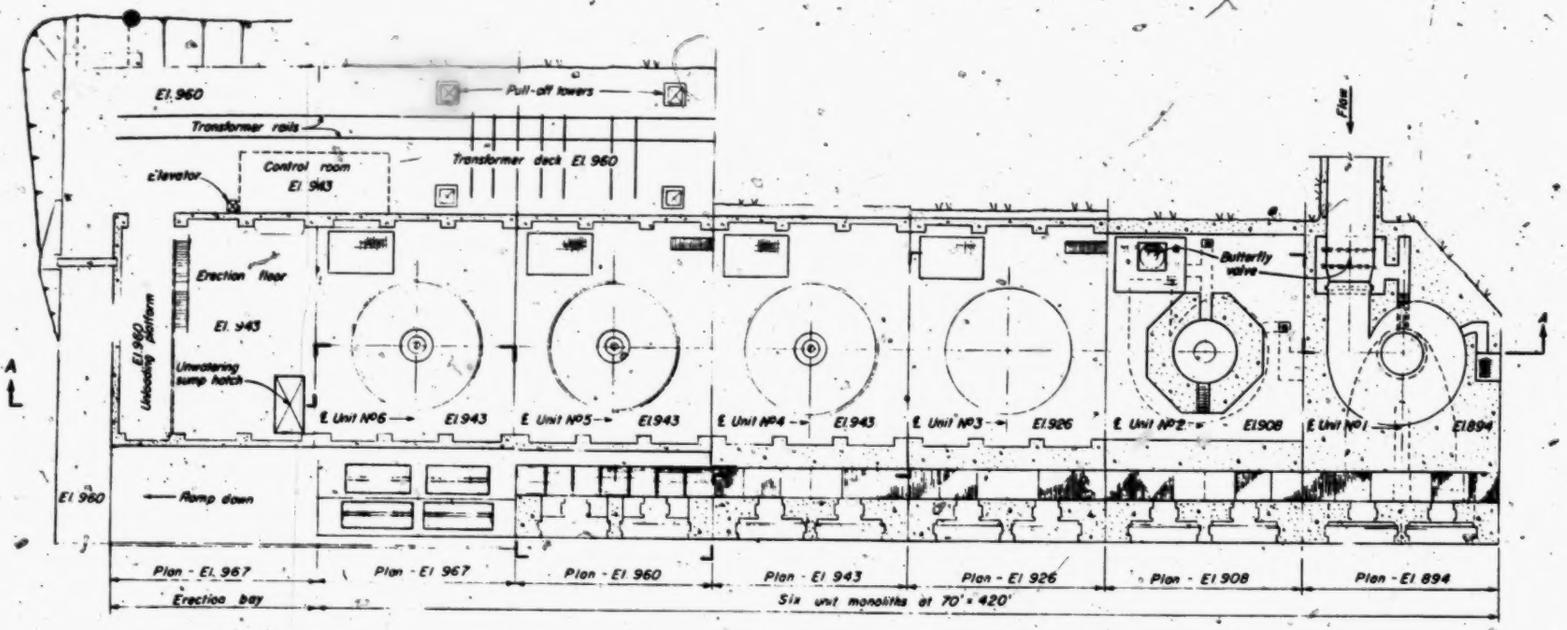
Scale 0 10 20 30 40 50 60 Feet — Scale 1 inch = 10 feet

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
KENNEWICK, WASHINGTON

HARZA ENGINEERING COMPANY
CHICAGO, ILLINOIS

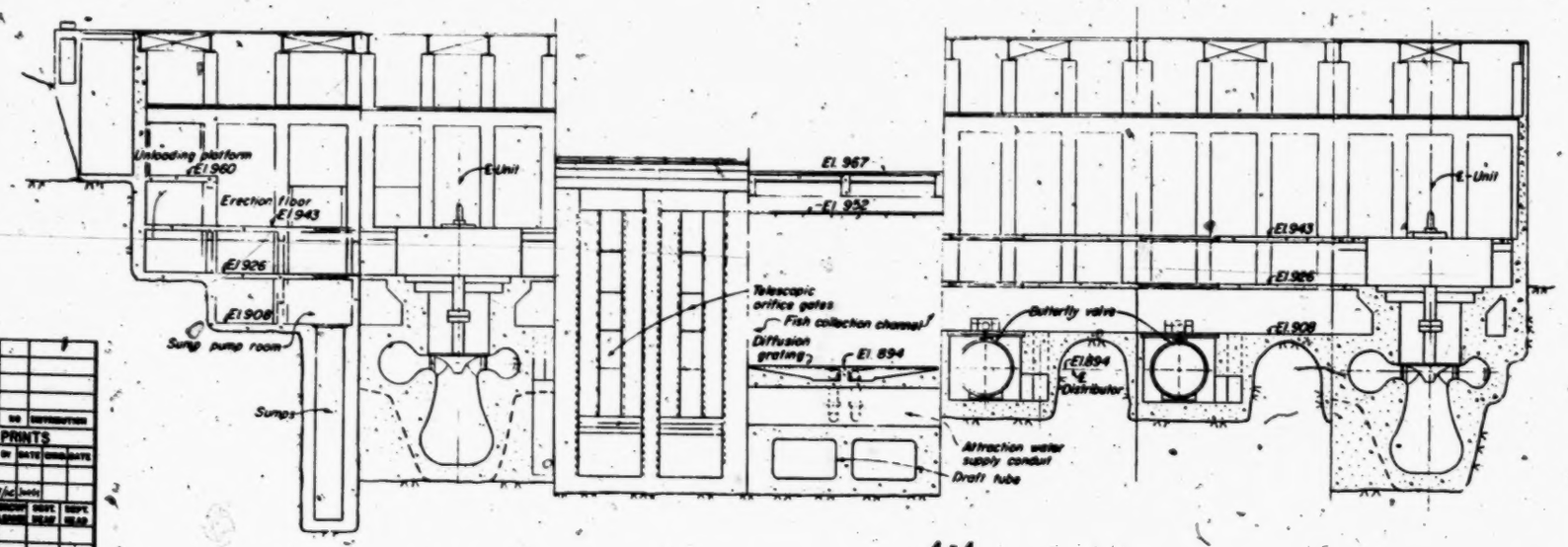
HIGH MOUNTAIN SHEEP PROJECT POWERHOUSE TRANSVERSE SECTION

WPPSS EXHIBIT NO. 266
Sheet 1 of 1
T. Zowski, C. E. Bouman and F. C. Rogers



PLAN

Filed with Exp. Certification dated OCT - 8 1962



A - A

FEDERAL POWER COMMISSION
Docket No. P 2243, et al
Hearing Ex. No. WPPSS-267
Date Identified 7/13/61
Date Admitted 7/24/61

Scale: 1 inch = 20 feet
Scale 0 20 40 60 80 100 120 Feet

	WASHINGTON PUBLIC POWER SUPPLY SYSTEM, RICHLAND, WASHINGTON
	HARZA ENGINEERING COMPANY, CHICAGO, ILLINOIS

HIGH MOUNTAIN SHEEP PROJECT
POWERHOUSE
PLAN AND LONGITUDINAL SECTION

WPPSS EXHIBIT NO. 267
Sheet 1 of 1
T. Zowski, C.E. Bouman and F.C. Rogers

PRINTS

16143

Hearing Exhibit No. WPPSS-268

HIGH MOUNTAIN SHEEP COMPARATIVE ESTIMATE SUMMARY

Acct. No.	Item	Amount
	PRODUCTION PLANT	
320	Land and Land Rights	$3,518,000
321	Power Plant Structures and Improvements	9,403,000
322	Reservoirs, Dams, and Waterways	78,016,000
323	Turbines, Governors, and Generators	28,340,000
324	Accessory Electrical Equipment	2,800,000
325	Miscellaneous Power Plant Equipment	2,060,000
326	Roads and Railroads	9,640,000
	Subtotal Production Plant	$133,777,000
	TRANSMISSION PLANT	
342	Substation nad Switching Station Structures and Improvements	1,500,000
343	Substation and Switching Station Equipment	5,500,000
344	Transmission Line from Powerhouse to Switchyard	375,000
	Subtotal Transmission Plant	$7,375,000

16144

	MIGRANT FISH PASSING FACILITIES	
	Upstream Migrant Fish Facilities	$ 8,096,000
	Downstream Migrant Fish Facilities	3,280,000
	Subtotal Migrant Fish Facilities	$11,376,000
	General Plant	100,000
	Recreation	50,000
	Preauthorization Studies	47,000
	Subtotal Direct Cost	$152,725,000
	Contingencies	22,905,000
	Total Direct Cost	$175,630,000
	Engineering, Supervision, and Overhead	13,670,000
	TOTAL CONSTRUCTION COST	$189,300,000

16145

HIGH MOUNTAIN SHEEP COMPARATIVE ESTIMATE DETAILS

Acct. No.		Item	Quantity	Unit Price	Amount
		PRODUCTION PLANT			
320		Land and Land Rights			
	.1	Land		L.S.	$ 1,270,000
	.3	Miscellaneous Charges and Credits			
	.31	Relocation of roads and bridges			
	.311	Forest Service Roads and Trails		L.S.	1,948,000
	.32	Design changer at Hell's Canyon Powerhouse because of encroachment		L.S.	300,000
		Subtotal Acct. 320, Land and Land Rights			$3,518,000
321		Power Plant Structures and Improvements			
	.1	Powerhouse			
	.10	Diversion and care of Water. (Included in Acct. 322.21)			
	.11	Foundation Exploration		L.S.	15,000
	.12	Excavatio..			
	.121	Open Cut Rock	200,000 C.Y.	3.50	700,000
	.13	Foundation preparation and treatment		L.S.	30,000
	.15	Concrete			

16146

321	.151	Mass	43,000 C.Y.	35.00	$ 1,505,000
	.152	Structural	51,000 C.Y.	60.00	3,060,000
	.16	Misc. Power plant items			
	.161	Powerhouse roof		L.S.	178,000
	.162	Architectural treatment		L.S.	550,000
	.163	Plumbing		L.S.	90,000
	.164	Heating, ventilating, and air conditioning		L.S.	270,000
	.165	Lighting		L.S.	235,000
	.166	Miscellaneous metal		L.S.	620,000
	.3	Miscellaneous buildings and operators village		L.S.	750,000
	.4	Water supply (construction camp and village)			1,400,000
		Subtotal Acct. 321 Power Plant Structures and Improvements			$9,403,000

16147

	Item	Quantity	Unit Price	Amount
	PRODUCTION PLANT (Continued)			
	Reservoirs, Dams, and Waterways			
.1	Reservoir			
.11	Clearing	1800 acres	200.00	$ 360,000
.2	Dam (Concrete)			
.21	Diversion and Care of Water			
.211	Excavation			
.2111	Open cut rock	50,000 C.Y.	3.50	175,000
.2112	Tunnel	70,000 C.Y.	20.00	1,400,000
.212	Cofferdams		L.S.	1,350,000
.213	Pumping			
.214	Concrete		L.S.	500,000
.2141	Tunnel portals	4,000 C.Y.	55.00	220,000
.2142	Tunnel lining	16,000 C.Y.	45.00	720,000
.2143	Tunnel plug	3,000 C.Y.	45.00	135,000
.215	Gate guides and anchors	50,000 lbs.	0.45	23,000
.216	Closure gates	720,000 lbs.	0.45	324,000
.22	Foundation exploration		L.S.	500,000

16148

.23	Excavation			
.231	Dam	394,000 C.Y.	3.50	$ 1,380,000
.232	Spillway	700,000 C.Y.	3.50	2,450,000
.24	Foundation treatment		L.S.	1,500,000
.25	Concrete			
.251	Dam (incl. thrust blocks)	2,072,000	22.00	45,584,000
.252	Spillway (incl. gravity section)			
.2521	Mass	70,000 C.Y.	22.00	1,540,000
.2522	Structural	40,000 C.Y.	50.00	2,000,000
.253	Intakes			
.2531	Mass	18,000 C.Y.	22.00	396,000
.2532	Structural	14,000 C.Y.	50.00	700,000
.4	Appurtenances			
.41	Spillway			
.411	Taintor gates and embedded parts	1,300,000 lb.	0.55	715,000
.412	Hoists, 175 ton	3 sets	60,000	180,000
.413	Bridge over Spillway		L.S.	90,000

16149

.42	Intake			
.421	Emergency gates (1 set)	500,000 lb.	0.45	$ 225,000
.422	Gate guides and anchors	625,000 lb.	0.45	281,000
.423	Trashracks	375,000 lb.	0.35	131,000
.424	Gantry crane, 350-ton	1 ea.	L.S.	675,000
.425	Bulkheads, future units		L.S.	50,000
.43	Outlet Works			
.431	Steel plate	750,000 lb.	0.35	263,000
.432	Gate and guides	525,000 lb.	0.45	236,000
.433	Ring jet valves-102"	7 ea.	88,000	615,000
.434	Trashracks	250,000 lb.	0.35	88,000

Acct. No.		Item	Quantity	Unit Price	Amount
		PRODUCTION PLANT (Continued)			
	.435	Valve house complete		L.S.	212,000
	.436	Concrete, mass	30,000 C.Y.	22.00	660,000
	.437	Concrete Structural	6,000 C.Y.	50.00	300,000
	.44	Elevator	1 ea.	L.S.	175,000
	.5	Waterways			
	.51	Spillway approach channel	150,000 C.Y.	3.50	525,000
	.52	Tailrace channel	300,000 C.Y.	3.50	1,050,000
		16150			
322	.53	Intake approach excavation	4,000 C.Y.	3.50	$ 14,000
	.8	Penstocks			
	.81	Excavation			
	.811	Tunnel	36,000 C.Y.	25.00	900,000
	.812	Shafts	20,000 C.Y.	40.00	800,000
	.82	Steel plate	15,500,000 lb.	0.35	5,425,000
	.83	Concrete lining	11,000 C.Y.	40.00	440,000
	.84	Butterfly valves	6 ea.	420,000.00	2,520,000
	.9	Draft tubes			
	.91	Gates, guides, and embedded parts	420,000 lbs.	0.45	189,000
		Subtotal, Acct. 322 Reservoir, Dam and Waterways			$78,016,000
323		Turbines and Generators			
	.1	Turbines and appurtenances	6 ea.	1,365,000	8,200,000
	.2	Governors and piping	6 ea.	717,000	430,000
		16151			
323	.3	Generators	6 ea.	L.S.	$19,710,000
		Subtotal Acct. 323 Turbines and Generators			$28,340,000
324		Accessory Electrical Equipment			
	.1	Connections, supports and structures		L.S.	1,510,000
	.2	Switchgear and control equipment		L.S.	1,290,000
		Subtotal Acct. 324 Accessory Electrical Equipment			$2,800,000
325		Miscellaneous Power Plant Equipment			
	.1	Auxiliary Equipment			
	.11	Misc. power plant equipment		L.S.	1,120,000
	.12	Elevators	2 ea.	L.S.	60,000
	.13	Cranes			
	.131	Bridge crane—350 tons	2 ea.	400,000	800,000
	.132	Draft tube gantry 30 ton	1 ea.	L.S.	80,000
		Subtotal Acct. 325 Misc. Power Plant Equipment			2,060,000

16152

Acct. No.	Item	Unit Price	Amount
	PRODUCTION PLANT (Continued)		
326	Roads and Railroads		
.1	Access road from Winchester, Idaho to top of dam	L.S.	$ 8,000,000
.2	Bridges		
.21	Across Salmon River	L.S.	500,000
.22	Piers for future bridge at powerhouse	L.S.	50,000
.3	Access to powerhouse		
.31	Access road to powerhouse	L.S.	300,000
.32	Tunnel		
.321	Excavation	L.S.	440,000
.322	Concrete	L.S.	250,000
.4	Access road to switchyard	L.S.	100,000
	Subtotal Acct. 326 Roads and Railroads		9,640,000
	Subtotal Accts. 320 to 326, Production Plant		$133,777,000

16153

	TRANSMISSION PLANT		
342	Substation and Switching Station Structures and Improvements	L.S.	$ 1,500,000
343	Substation and Switching Station Equipment	L.S.	5,500,000
344	Transmission from Powerhouse to Switchyard	L.S.	375,000
	Subtotal Accts. 342, 343, 344 Transmission Plant		$7,375,000

16154

	MIGRANT FISH PASSING FACILITIES		
	UPSTREAM MIGRANT FISH FACILITIES		
	High Mountain Sheep Dam		
	Temporary Fishways During Construction	L.S.	$ 1,750,000
	Pumphouse	L.S.	1,830,000
	Fishways at Powerhouse	L.S.	1,364,000
	Fish Ladders	L.S.	2,091,000
	Pressure Lock	L.S.	861,000
	Subtotal High Mountain Sheep Dam		7,896,000
	Imnaha Fish Barrier		
	Ladder and Fishways	L.S.	200,000
	Subtotal Upstream Migrant Fish Facilities		$ 8,096,000

(16154)

Acct. No.	Item	Unit Price	Amount
	DOWNSTREAM MIGRANT FISH FACILITIES		
	High Mountain Sheep Dam		
	Skimmer Barge and Unloading Facilities	L.S.	$ 1,300,000
	Imnaha Fish Barrier		
	Structures and Diversion	L.S.	1,213,000
	Snake River Station		
	(Below Hells Canyon Dam)		
	Loading Station and Piping	L.S.	767,000
	16155		
	Subtotal Downstream Migrant Fish Facilities		$ 3,280,000
	Subtotal Migrant Fish Facilities		$11,376,000
	GENERAL PLANT	L.S.	100,000
	RECREATION	L.S.	50,000
	PREAUTHORIZATION STUDIES	L.S.	47,000
	SUBTOTAL DIRECT COST		$132,725,000

COMPARISON OF PROJECT OUTPUT

Nez Perce Plan, High Mountain Sheep-Lower Canyon Plan, High Mountain Sheep Plan
Initial Period - Prior to Completion of 15,500,000 AF of Canadian Storage

	Coordinated Operation					Ultimate Integrated Operation				
	Nominal Prime Energy-Avg. Mw			Avg. Energy	Mw Peak	Nominal Prime Energy-Avg. Mw			Avg. Energy	Mw Peak
	7-Month Period	8-Month Period	9-Month Period	20-Year Avg. Mw	Capability Jan. 1937	7-Month Period	8-Month Period	9-Month Period	20-Year Avg. Mw	Capability Jan. 1937
Nez Perce Plan										
Freedom	-	-	-	-	-	-	-	-	-	-
Whitebird	-	-	-	-	-	-	-	-	-	-
Nez Perce	1,090	1,056	1,011	1,075	1,850	1,152	1,098	1,048	1,027	1,609
China Gardens	-	-	-	-	-	-	-	-	-	-
Subtotal	1,090	1,056	1,011	1,075	1,850	1,152	1,098	1,048	1,027	1,609
Downstream Effect	285	249	222	106	-	428	375	332	135	-
Total	1,375	1,305	1,233	1,181	1,850	1,580	1,473	1,380	1,162	1,609
High Mountain Sheep-Lower Canyon Plan										
Freedom	-	-	-	-	-	-	-	-	-	-
Lower Canyon	382	363	345	429	820	457	423	398	407	580
High Mountain Sheep	747	728	696	653	1,125	785	762	728	647	1,105
China Gardens	-	-	-	-	-	-	-	-	-	-
Subtotal	1,129	1,091	1,041	1,082	1,945	1,242	1,185	1,126	1,054	1,685
Downstream Effect	307	269	239	106	-	506	450	400	143	-
Total	1,436	1,360	1,280	1,188	1,945	1,748	1,635	1,526	1,197	1,685
High Mountain Sheep Plan										
Freedom	-	-	-	-	-	-	-	-	-	-
High Mountain Sheep	739	693	667	653	1,218	776	742	710	645	1,040
China Gardens	-	-	-	-	-	-	-	-	-	-
Subtotal	739	693	667	653	1,218	776	742	710	645	1,040
Downstream Effect	93	60	53	29	-	173	149	133	38	-
Total	832	753	720	682	1,218	949	891	843	683	1,040
ADVANTAGE, Nez Perce Plan over										
High Mountain Sheep-Lower Canyon Plan	(61)	(55)	(47)	(7)	(95)	(168)	(162)	(146)	(35)	(76)
High Mountain Sheep Plan	543	552	513	499	632	631	582	537	479	569

Note: 7-Month Period - September 16, 1936 through April 15, 1937;
8-Month Period - September 1, 1936 through April 30, 1937;
9-Month Period - August 1, 1936 through April 30, 1937.

WPPSS Exhibit ___ (
Sheet 1 of 2
R. B. Gallup

WPPSS Exhibit ____(G-6)
Sheet 4 of 4
R. B. Gallup

CUMULATIVE ADVANTAGE

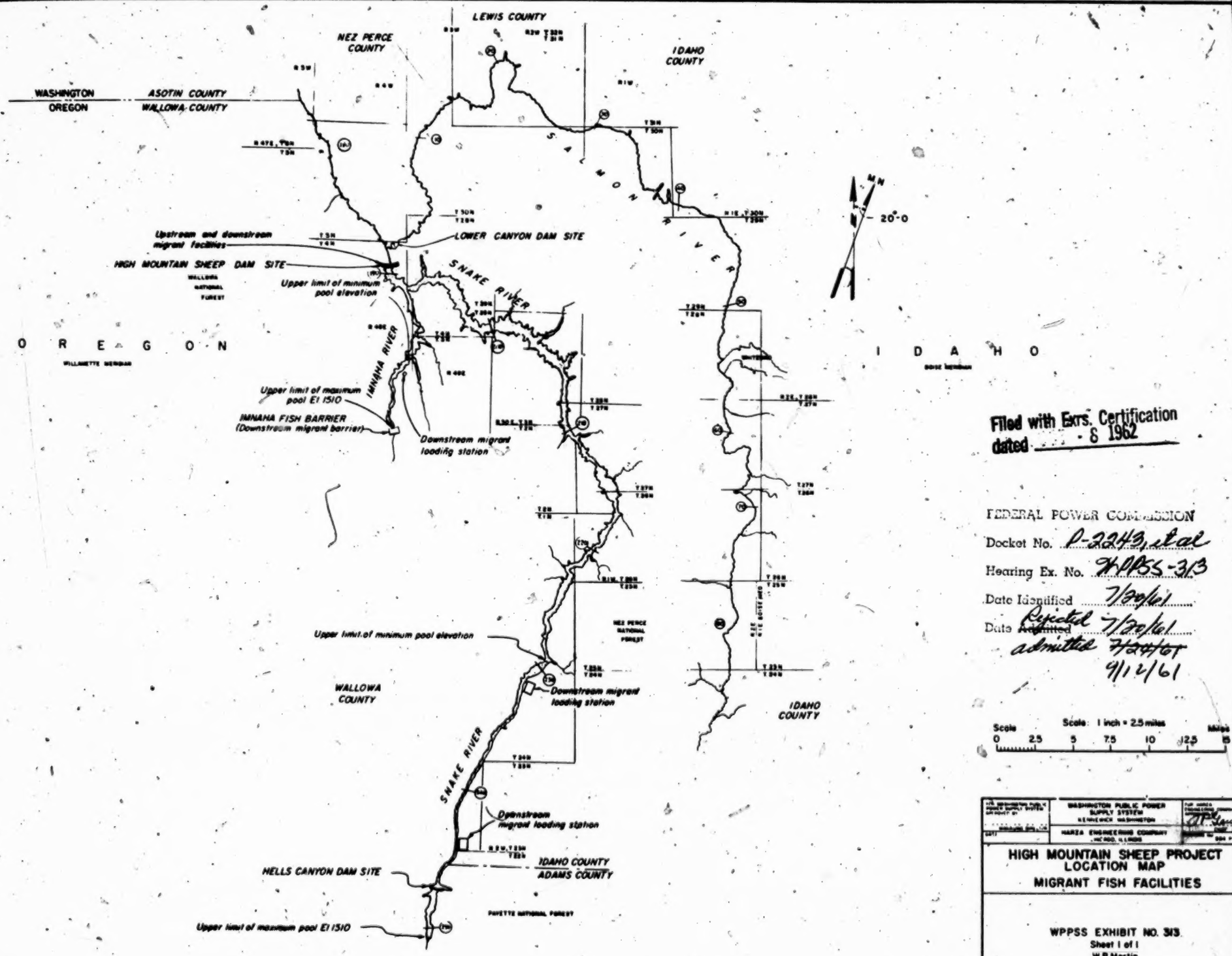
Nez Perce Plan Over Alternative Plans
Based On Flood Control Benefits Only

	Without Canadian Storage							With Canadian Storage						
	Advantage - Nez Perce Plan Over		Cumulative Advantage Nez Perce Plan Over Alternative Plans					Advantage - Nez Perce Plan Over		Cumulative Advantage Nez Perce Over Alternative Plans				
Year	High Mt. Sheep Plan (1)	High Mt. Sheep-L. Canyon Plan (2)	Schedule A (3)	Schedule B (4)	Schedule C (5)	Schedule D (6)	Schedule E (7)	High Mt. Sheep Plan (8)	High Mt. Sheep-L. Canyon Plan (9)	Schedule A (10)	Schedule B (11)	Schedule C (12)	Schedule D (13)	Schedule E (14)
1967-68	$3,100,000	$400,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1968-69	3,100,000	400,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	-	-	-	-	-	-	-
1969-70	3,100,000	400,000	9,300,000	9,300,000	9,300,000	9,300,000	9,300,000	-	-	-	-	-	-	-
1970-71	3,100,000	400,000	12,400,000	12,400,000	12,400,000	12,400,000	12,400,000	300,000	-	300,000	300,000	300,000	300,000	300,000
1971-72	3,100,000	400,000	15,500,000	15,500,000	15,500,000	15,500,000	15,500,000	300,000	-	600,000	600,000	600,000	600,000	600,000
1972-73	3,300,000	400,000	15,900,000	18,800,000	18,800,000	18,800,000	18,800,000	300,000	-	600,000	900,000	900,000	900,000	900,000
1973-74	3,300,000	400,000	16,300,000	22,100,000	22,100,000	22,100,000	22,100,000	300,000	-	600,000	1,200,000	1,200,000	1,200,000	1,200,000
1974-75	3,300,000	400,000	16,700,000	25,400,000	25,400,000	25,400,000	25,400,000	300,000	-	600,000	1,500,000	1,500,000	1,500,000	1,500,000
1975-76	3,300,000	400,000	17,100,000	28,700,000	28,700,000	28,700,000	28,700,000	300,000	-	600,000	1,800,000	1,800,000	1,800,000	1,800,000
1976-77	3,300,000	400,000	17,500,000	32,000,000	32,000,000	32,000,000	32,000,000	300,000	-	600,000	2,100,000	2,100,000	2,100,000	2,100,000
1977-78	3,500,000	500,000	18,000,000	32,500,000	35,500,000	35,500,000	35,500,000	300,000	-	600,000	2,100,000	2,400,000	2,400,000	2,400,000
1978-79	3,500,000	500,000	18,500,000	33,000,000	39,000,000	39,000,000	39,000,000	300,000	-	600,000	2,100,000	2,700,000	2,700,000	2,700,000
1979-80	3,500,000	500,000	19,000,000	33,500,000	42,500,000	42,500,000	42,500,000	300,000	-	600,000	2,100,000	3,000,000	3,000,000	3,000,000
1980-81	3,500,000	500,000	19,500,000	34,000,000	46,000,000	46,000,000	46,000,000	300,000	-	600,000	2,100,000	3,300,000	3,300,000	3,300,000
1981-82	3,500,000	500,000	20,000,000	34,500,000	49,500,000	49,500,000	49,500,000	300,000	-	600,000	2,100,000	3,600,000	3,600,000	3,600,000
1982-83	3,800,000	500,000	20,500,000	35,000,000	50,000,000	53,300,000	53,300,000	300,000	-	600,000	2,100,000	3,600,000	3,900,000	3,900,000
1983-84	3,800,000	500,000	21,000,000	35,500,000	50,500,000	57,100,000	57,100,000	300,000	-	600,000	2,100,000	3,600,000	4,200,000	4,200,000
1984-85	3,800,000	500,000	21,500,000	36,000,000	51,000,000	60,900,000	60,900,000	300,000	-	600,000	2,100,000	3,600,000	4,500,000	4,500,000
1985-86	3,800,000	500,000	22,000,000	36,500,000	51,500,000	64,700,000	64,700,000	300,000	-	600,000	2,100,000	3,600,000	4,800,000	4,800,000
1986-87	3,800,000	500,000	22,500,000	37,000,000	52,000,000	68,500,000	68,500,000	300,000	-	600,000	2,100,000	3,600,000	5,100,000	5,100,000
1987-88	3,800,000	500,000	23,000,000	37,500,000	52,500,000	69,000,000	72,300,000	300,000	-	600,000	2,100,000	3,600,000	5,100,000	5,400,000
1988-89	3,800,000	500,000	23,500,000	38,000,000	53,000,000	69,500,000	76,100,000	300,000	-	600,000	2,100,000	3,600,000	5,100,000	5,700,000
1989-90	3,800,000	500,000	24,000,000	38,500,000	53,500,000	70,000,000	79,900,000	300,000	-	600,000	2,100,000	3,600,000	5,100,000	6,000,000
2011-12	3,800,000	500,000	35,000,000	49,500,000	64,500,000	81,000,000	163,500,000	300,000	-	600,000	2,100,000	3,600,000	5,100,000	12,000,000

Note: Schedule A - Lower Canyon Project delayed until 1972-73.
Schedule B - Lower Canyon Project delayed until 1977-78.
Schedule C - Lower Canyon Project delayed until 1982-83.
Schedule D - Lower Canyon Project delayed until 1987-88.
Schedule E - Lower Canyon Project delayed until 2012.

Note: Computation of Flood Control Benefit Advantage

	Without Canadian Storage		With Canadian Storage
	1968	1985	
Flood Control Benefits:			
Nez Perce Plan-4,700,000 AF	$4,968,000 @ $1.057/AF	$6,110,000 @ $1.30/AF	$524,000 @ $0.1116/AF
High Mt. Sheep Plan	$1,840,000 PNPC Ex. 19	$2,260,000 PNPC Ex. 19	$240,000 PNPC Ex. 19
L. Canyon Plan-2,500,000 AF	$2,680,000 @ $1.072/AF	$3,300,000 @ $1.32/AF	$283,000 @ $0.1133/AF
Advantage - Nez Perce Plan Over:			
High Mt. Sheep Plan	$3,128,000	$3,850,000	$284,000
High Mt Sheep-L. Canyon Plan	$ 448,000	$ 550,000	$ 1,000



Filed with Exhs. Certification dated ... - 8 1962

FEDERAL POWER COMMISSION
Docket No. P-2243, et al
Hearing Ex. No. WPPSS-313
Date Identified 7/20/61
Date ~~Admitted~~ Rejected 7/20/61
admitted 7/24/61
9/12/61

Scale: 1 inch = 2.5 miles

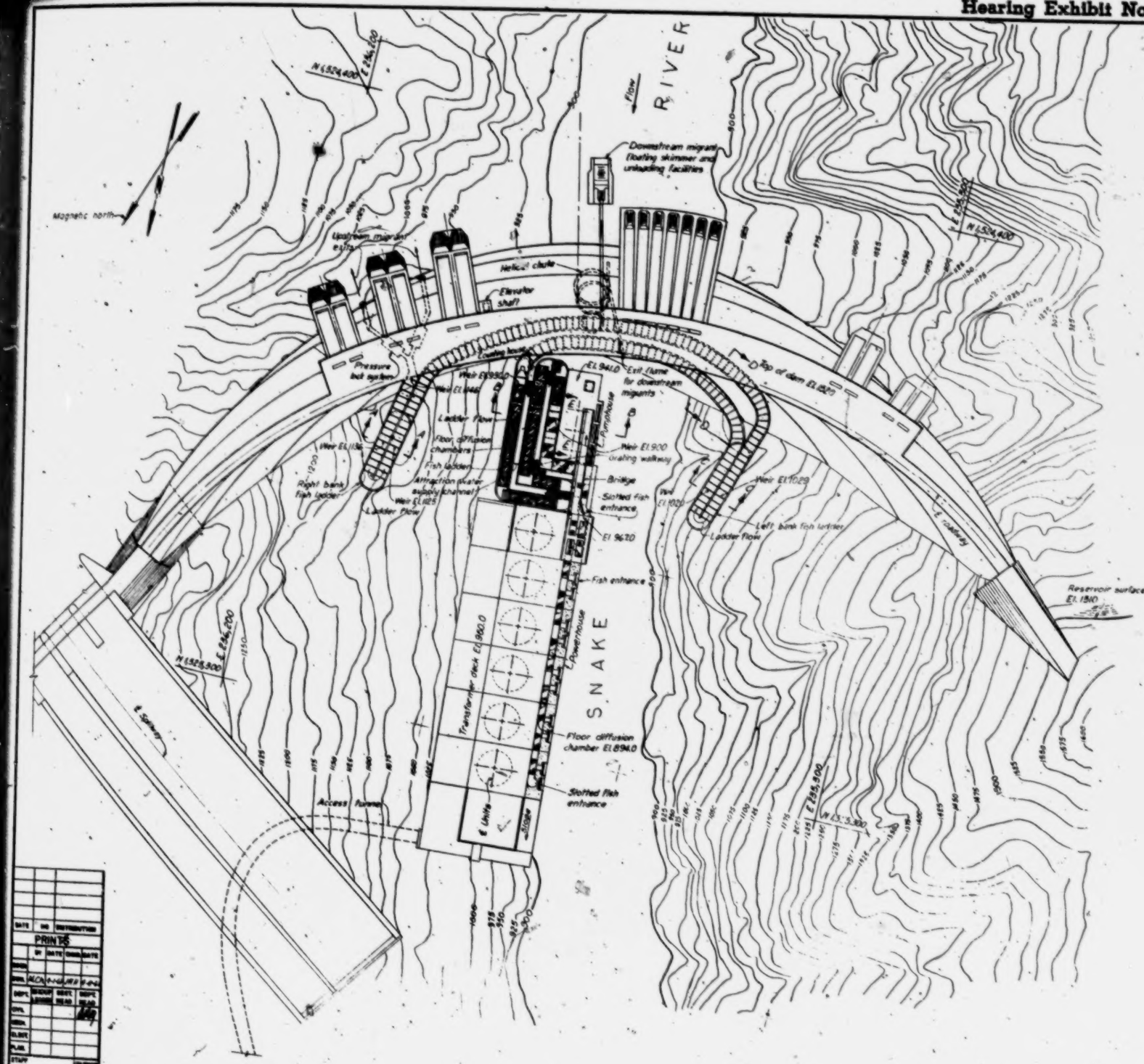
Scale						Miles
0	2.5	5	7.5	10	12.5	15

	WASHINGTON PUBLIC POWER SUPPLY SYSTEM, RICHLAND, WASHINGTON	
	HARZA ENGINEERING COMPANY, CHICAGO, ILLINOIS	

HIGH MOUNTAIN SHEEP PROJECT
LOCATION MAP
MIGRANT FISH FACILITIES

WPPSS EXHIBIT NO. 313
Sheet 1 of 1
W.R.Martin

DATE	NO	DISTRIBUTION
PRINTS		



Filed with Exrs. Certification
dated OCT - 8 1962

FEDERAL POWER COMMISSION
Docket No. P-2243, et al
Hearing Ex. No. WPPSS-314
Date Identified 7/20/64
Date Admitted Rejected 7/20/64
Admitted 7/24/64

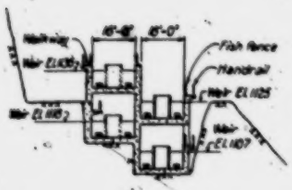
Scale: 1 inch = 60 feet
Scale 0 60 120 180 240 300 360 Feet

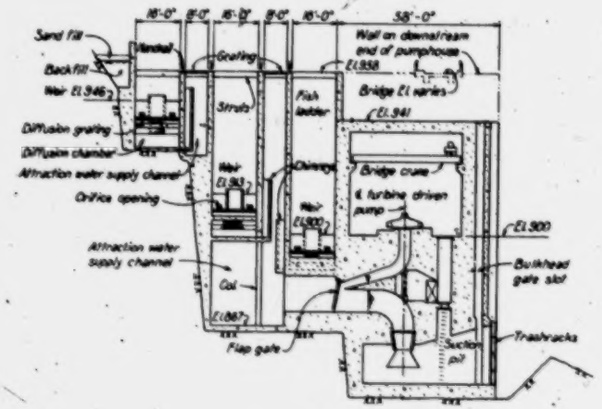
	WASHINGTON PUBLIC POWER SUPPLY SYSTEM, RICHLAND, WASHINGTON	
	HARZA ENGINEERING COMPANY, CHICAGO, ILLINOIS	

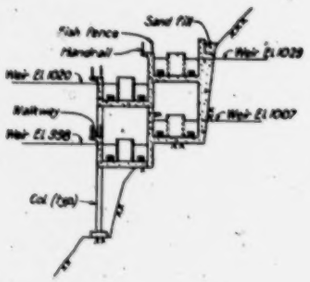
HIGH MOUNTAIN SHEEP PROJECT
DAM AND POWERHOUSE
MIGRANT FISH FACILITIES

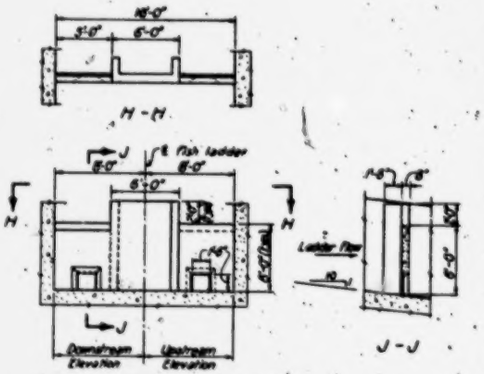
WPPSS EXHIBIT NO. 314
Sheet of
W.R. Martin

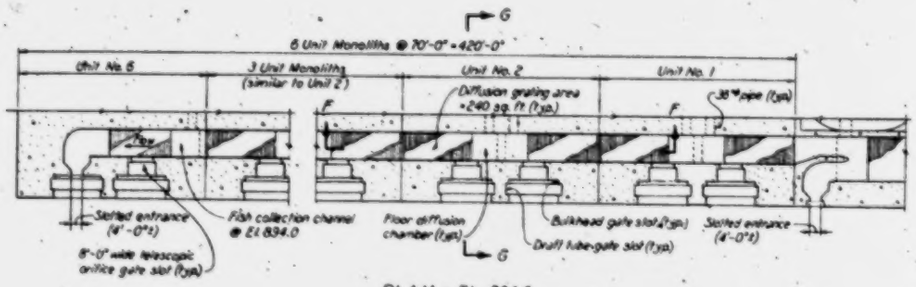
PRINTS

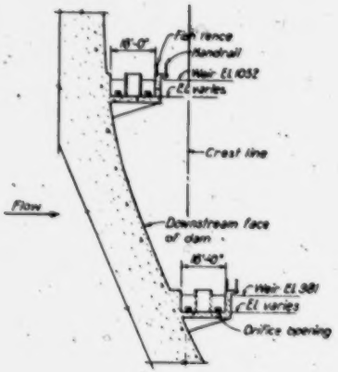


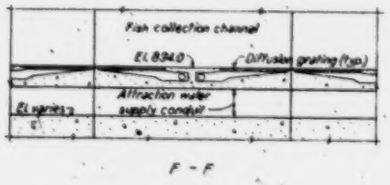


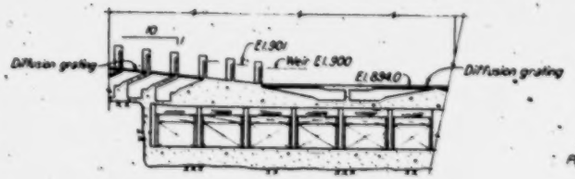


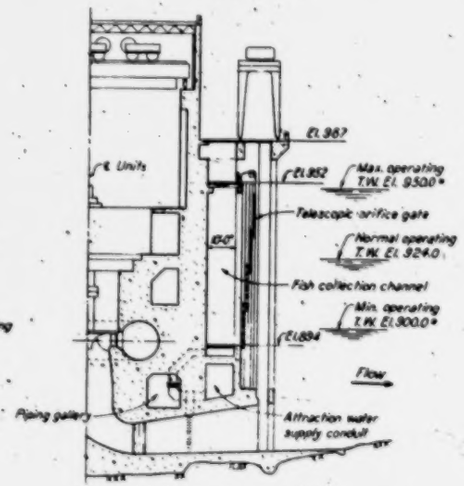












Filed with Exrs. Certification dated _____, 1962

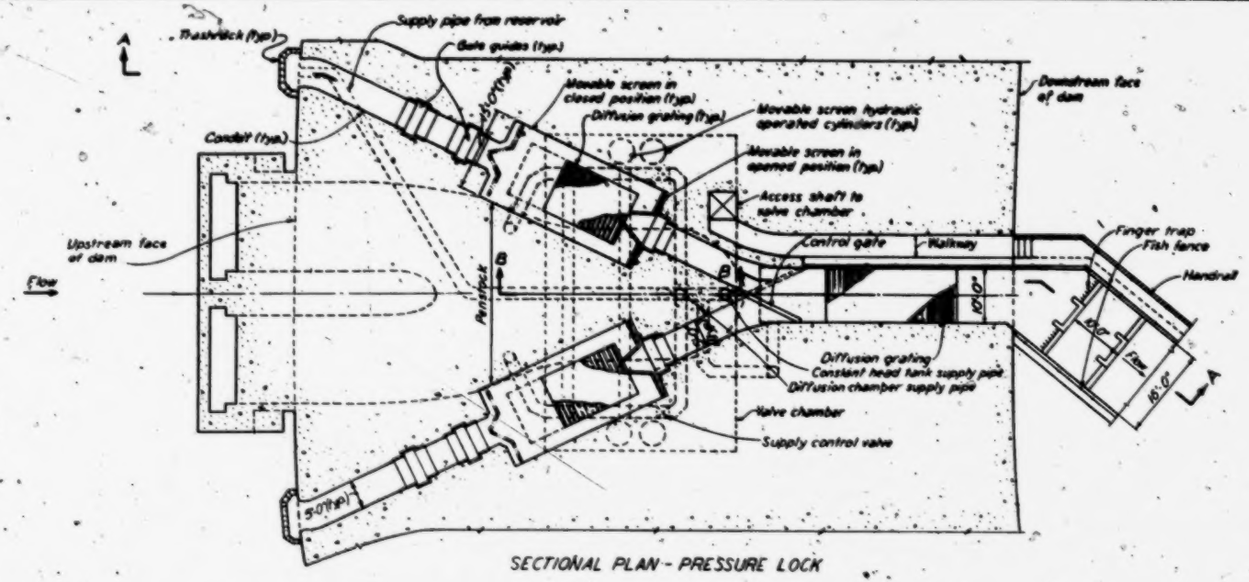
FEDERAL POWER COMMISSION
Docket No. P-2243, etal
Hearing Ex. No. WPPSS-315
Date Identified 7/20/62
Date Received 7/20/62
Admitted 7/20/62

Scale: 1 inch = 20 feet
Scale 0 20 40 60 80 100 120 Feet
Except as noted

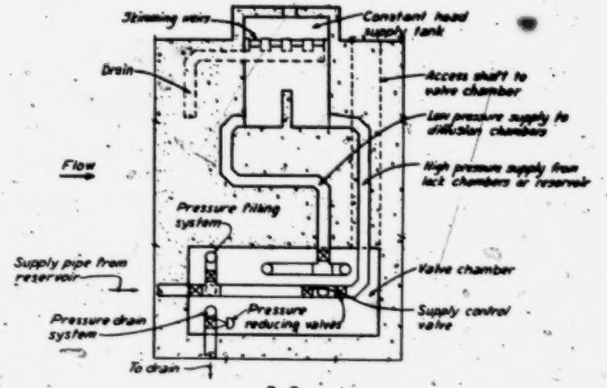
	WASHINGTON PUBLIC POWER SUPPLY SYSTEM KENNEWICK, WASHINGTON	
	HARZA ENGINEERING COMPANY CHICAGO, ILLINOIS	

HIGH MOUNTAIN SHEEP PROJECT
POWERHOUSE AND FISH LADDER
UPSTREAM MIGRANT FISH FACILITIES

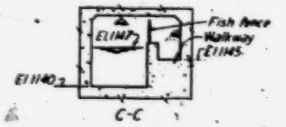
WPPSS EXHIBIT NO. 315
Sheet 1 of 1
W.R. Martin

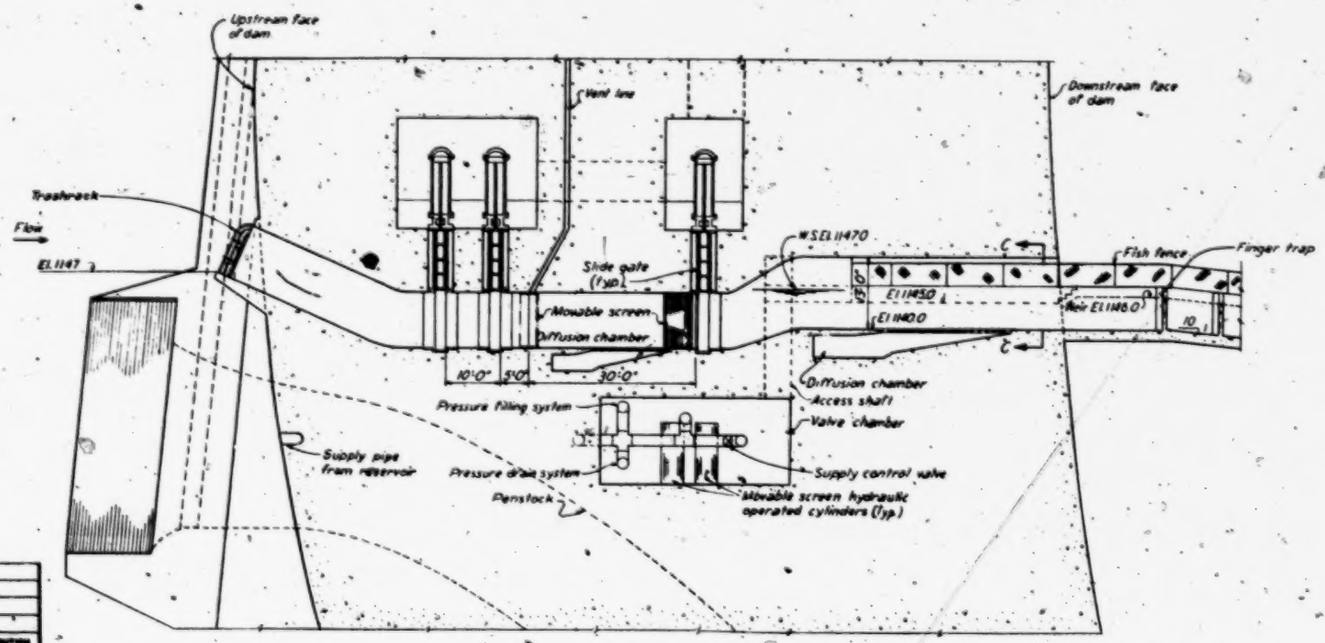


SECTIONAL PLAN - PRESSURE LOCK



B-B





A-A

Filed with Exrs. Certification dated ____ 1962

Docket No. P-2243, et al
Hearing Ex. No. WPPSS-316
Date Identified 7/24/62
Date Admitted Rejected 7/24/62
admitted 9/12/62

Scale: 1 inch = 10 feet

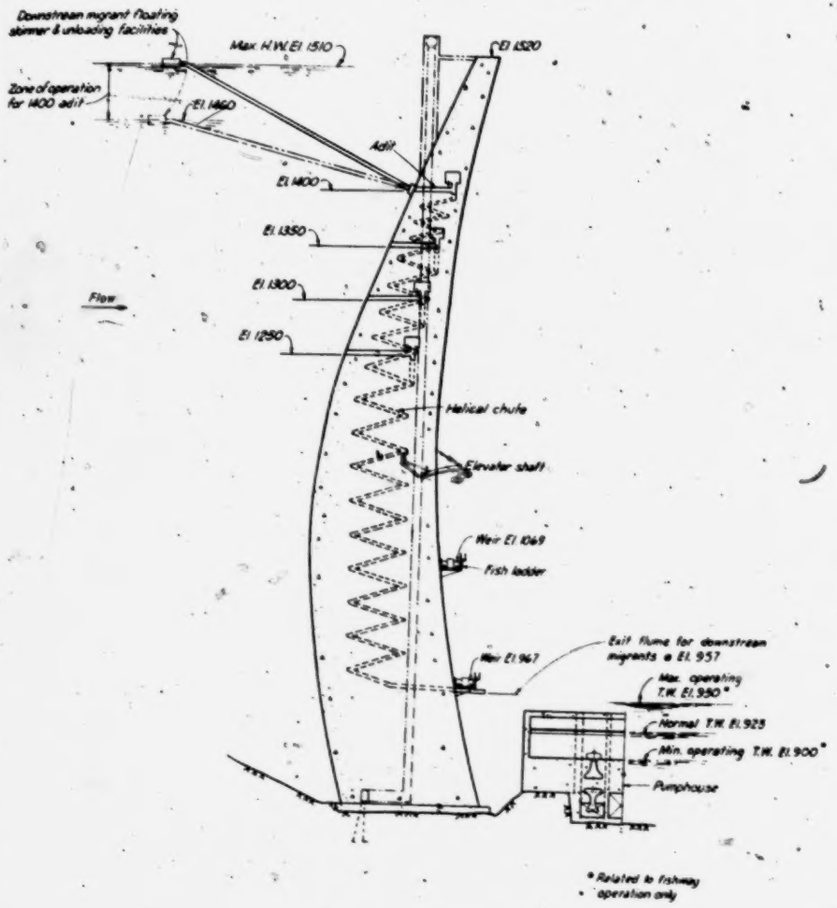
Scale 0 10 20 30 40 50 Feet 60

	WASHINGTON PUBLIC POWER SUPPLY SYSTEM KENNEWICK, WASHINGTON	
	HARZA ENGINEERING COMPANY CHICAGO, ILLINOIS	

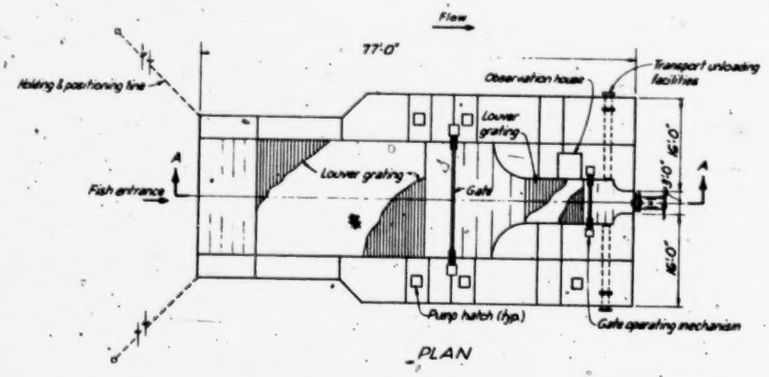
HIGH MOUNTAIN SHEEP PROJECT
DAM
UPSTREAM MIGRANT FISH FACILITIES

WPPSS EXHIBIT NO. 316
Sheet 1 of 1
W.R.Martin

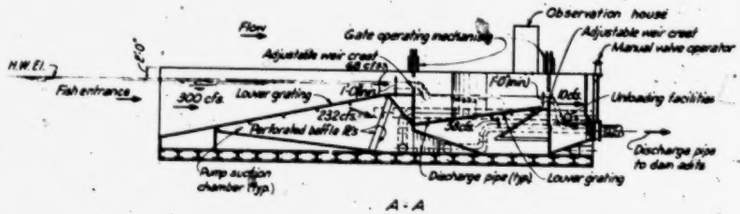
PRINTS



SECTION THROUGH DAM



PLAN



A - A

DOWNSTREAM MIGRANT FLOATING SKIMMER AND UNLOADING FACILITIES

Scale: 1 inch = 10 feet

Scale 0 10 20 30 40 50 Feet 60

Filed with Exrs. Certification dated 5 1962

C. [illegible]

[illegible] No. P-2243, etal

Exhibit No. WPPSS-317

Date Identified 7/20/61

Date Admitted Rejected 7/20/61 Admitted 7/24/61 9/12/61

Scale 0 50 100 150 200 250 Feet 300

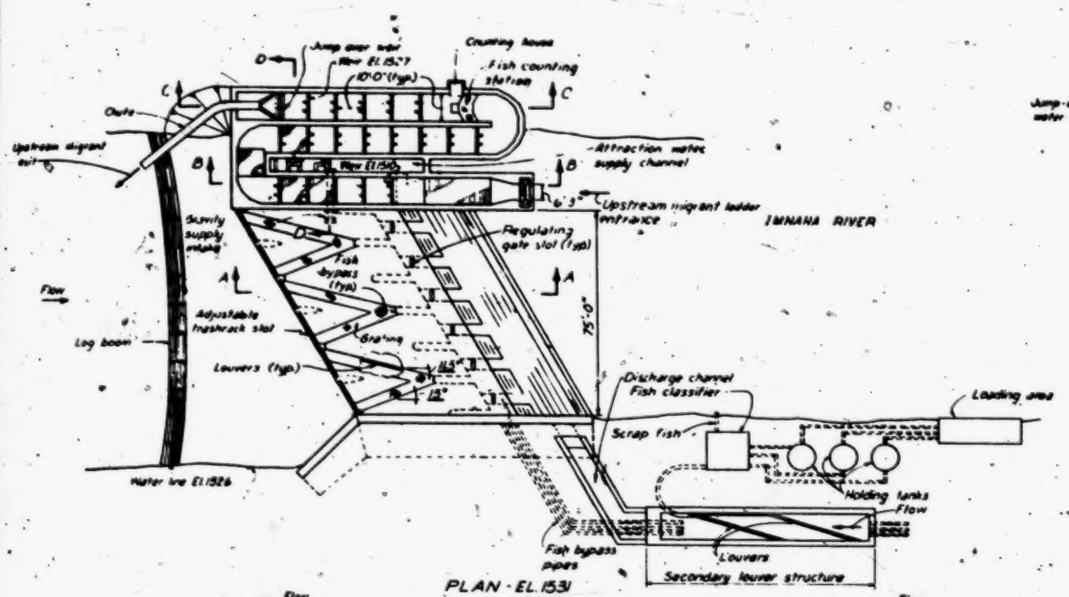
Except as noted

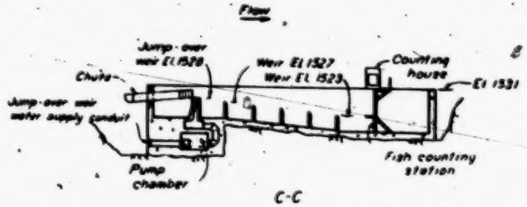
	WASHINGTON PUBLIC POWER SUPPLY SYSTEM KENNEWICK, WASHINGTON	
	HARZA ENGINEERING COMPANY CHICAGO, ILLINOIS	

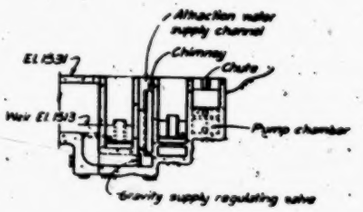
HIGH MOUNTAIN SHEEP PROJECT
DAM
DOWNSTREAM MIGRANT FISH FACILITIES

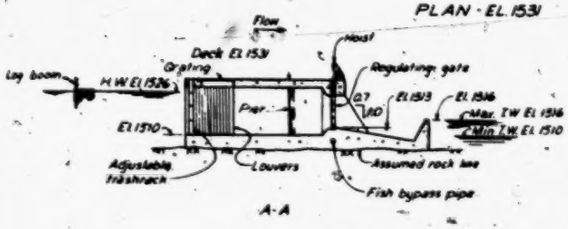
WPPSS EXHIBIT NO. 317
Sheet 1 of 1
W.R. Martin

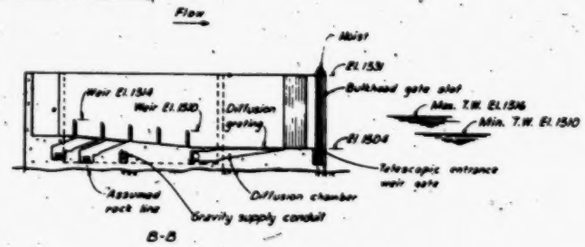
DATE	NO	DISTRIBUTION
PRINTS		











Filed with Exrs. Certification dated ____ 1962

FEDERAL POWER COMMISSION
Docket No. P-2243 etal
Hearing Ex. No. WPPSS-318
Date Identified 7/20/61
Date ~~Admitted~~ Rejected 7/20/61
Admitted 7/24/61
9/12/61

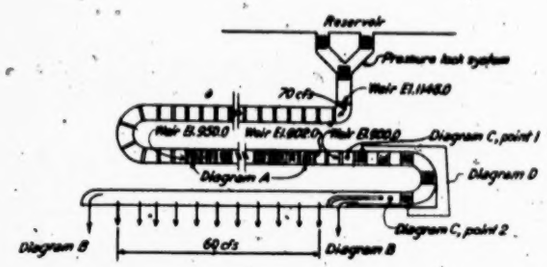
Scale 0 20 40 60 80 100 Feet 120
Scale: 1 inch = 20 feet

	WASHINGTON PUBLIC POWER SUPPLY SYSTEM, RICHMOND, WASHINGTON	
	HARZA ENGINEERING COMPANY, CHICAGO, ILLINOIS	

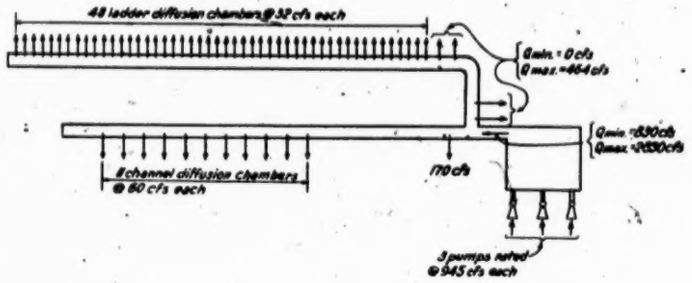
HIGH MOUNTAIN SHEEP PROJECT
IMNAHA FISH BARRIER
MIGRANT FISH FACILITIES

WPPSS EXHIBIT NO. 318
Sheet 1 of 1
W.R. Martin

PRINTS



FISH ATTRACTION & PASSAGE SYSTEM



AUXILIARY WATER SUPPLY SYSTEM

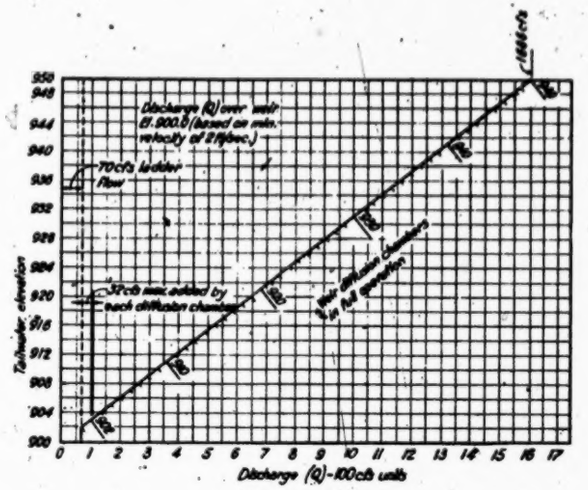


DIAGRAM A

Filed with Exrs. Certification
dated OCT - 8 1962

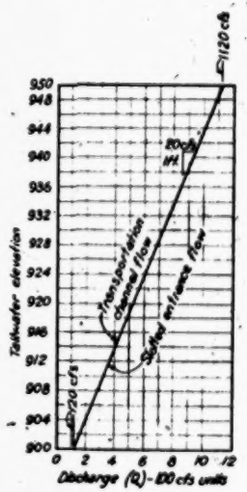


DIAGRAM B

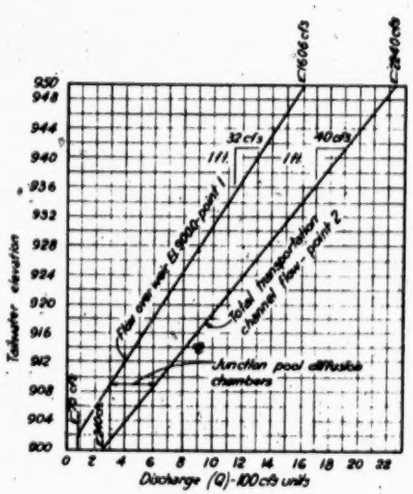


DIAGRAM C

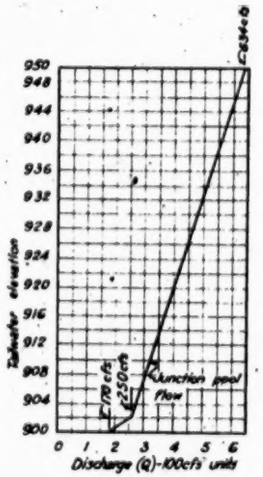


DIAGRAM D

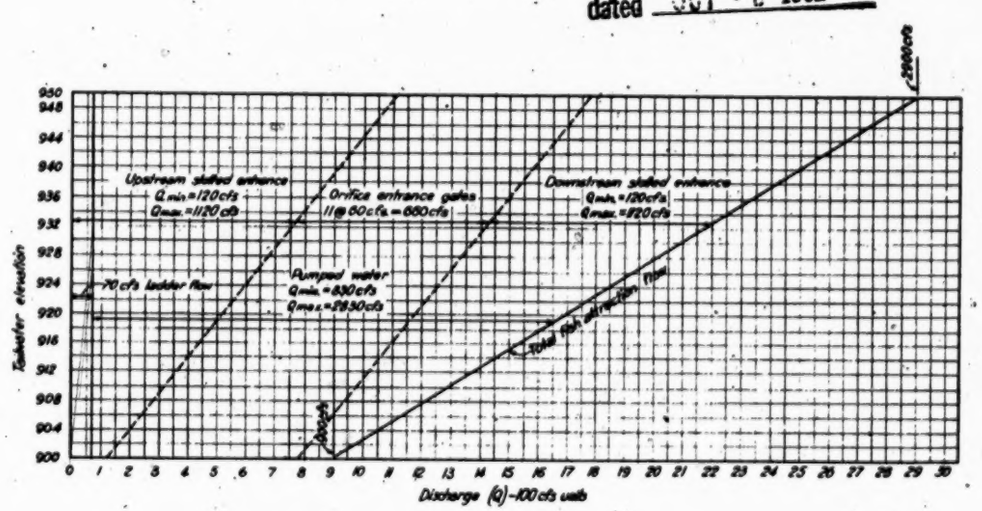


DIAGRAM E

DATE	NO	DISTRIBUTION
		PRINTS
	BY	DATE
	JC	4-62

	WASHINGTON PUBLIC POWER SUPPLY SYSTEM KENNEWICK, WASHINGTON	
DATE	HARZA ENGINEERING COMPANY CHICAGO, ILLINOIS	

HIGH MOUNTAIN SHEEP PROJECT
FLOW DIAGRAMS

WPPSS EXHIBIT NO. 319
Sheet 1 of 1
W.R. Martin

16276

WPPSS Exhibit No. 321

HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 1 of 9 Pages
Structure Pumphouse Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrants			$(U.S. dollars)
1	Excavation; rock	11 800 CY	5 00	59 000
2	Concrete	16 000 CY	50 00	800 000
3	Bridge Crane		L.S.	20 000
4	Turbine Driven Pumps	3 each.	236 000	708 000
5	Bulkhead Gates	105 000 lbs	0 40	42 000
6	Trashracks	60 000 lbs	0 35	21 000
7	Bulkhead Gates & Trashrack Guides	75 000 lbs	0 40	30 000
8	Mechanical Items		L.S.	50 000
9	Electrical Items		L.S.	100 000
		Sub-total		$1,830,000

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HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 2 of 9 Pages
Structure Fish Ladder—L.&R. Bank, Dame, & @ Pumphouse
Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrants			$(U.S. dollars)
1	Excavation	37 700 CY	5 00	188 500
2	Concrete Left Bank	2 000 CY	90 00	180 000
Concrete	Right Bank	2,200 CY	90 00	198 000
	@ Pumphouse	15,100 CY	60 00	906 000
	on face of Dam.	2,720 CY	90 00	244 800
3	Back fill	2,000 CY	1 00	2 000
4	Slotted Entrance Bulkhead & Guides	8 000 lb	0 40	3 200
5	Valves 48"ø	25 000 lb	0 90	22 500
6	Grating Aluminum	173 000 lb	1 10	190 300
7	Grating Steel	52 000 lb	0 55	28 600
5	Handrails—2"ø std steel pipes	3 000 LF	4 50	13 500
6	Parapet Railing Aluminum	310 LF	5 80	1 800
7	Fish Fence	2 200 LF	3 00	6 600
8	Miscellaneous Metals	200 000 lb	0 40	80 000
9	Fish Counting Station & House	1	L.S.	25 000
		Sub-total		$2,090,800
	Fishways During Construction		L.S.	1,750,000
		Sub-total		$3,840,800

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HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 3 of 9 Pages
Structure Fish Collection Channel—Powerhouse
Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrants			$(U.S. dollars)
1	Concrete	9 400 CY	60 00	564 000
2	Bulkhead Gates & Guides	132 000 lbs	0 40	52 800
3	Telescopic Gates & Guides	191 000 lbs	0 45	86 000
4	Telescopic Gate Hoists	142 000 lbs	1 10	156 100
5	Slotted Entrance Bulkhead & Guides	8 000 lbs	0 40	3 200
6	Pipes 36"ø . ¼" thick	37 000 lbs	0 55	20 300
7	Valves 36"ø	34 200 lbs	0 90	30 800
8	Grating—aluminum	54 000 lbs	1 10	59 400
9	Grating—steel	75 600 lbs	0 55	41 500
10	Mechanical Items		L.S.	150 000
11	Electrical Items		L.S.	200 000
		Sub-total		$1,364,100

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HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 4 of 9 Pages
Structure Pressure Lock @ Main Dam Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrant Facilities			$(U.S. dollars)
1	Gates—sliding lift gate with hydraulic hoists	1,020,000 lbs	0 75	765 000
2	Diffusion grating	8,500 lb	1 10	9 400
3	Control house	—	L.S.	25 000
4	Pipes & valves		L.S.	30 000
5	Trashracks (2)	4 000 lb	0 35	1 400
6	Pressure reducing valves	—	L.S.	10 000
7	Movable screen		L.S.	20 000
		Sub total		$860 800

Back up data—Nez Perce by WJT (7/12/60)

16280

HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 5 of 9 Pages
Structure Imnaha Fish Barrier Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrants			$(U.S. dollars)
1	Concrete	2 200 CY	60 00	132 000
2	Alum. Diffusion Grating	11 000 lbs	1 10	12 100
3a	Telescopic Gates	1 600 lbs	0 50	800
b	Telescopic Gates Guides	800 lbs	0 50	400
c	Telescopic Gates Hoist	1 000 lbs	1 10	1 100
4	Valves—1-48"ø & 1-36"ø	8 000 lbs	0 90	7 200
6	Concrete Water Inlet	27 CY	60 00	1 600
6	Excavation; Rock	2 000 CY	5 00	10 000
7	Jump-over Weir		L.S.	12 000
8	Counting Station & House		L.S.	5 000
9	Chute	1 250 lbs	0 35	400
10	Misc. Electrical Items		L.S.	10 000
11	Misc. Mechanical Items		L.S.	5 000
		Sub-total		$197 600
		Total CY		$200,000

Back up data—Nez Perce by RB (3/6/61) page 60A.

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HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 6 of 9 Pages
Structure H. M. Sheep Dam—Skimmer & Unloading Facilities
Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	U/S Migrants			$(U.S. dollars)
1	Floating Skimmer		L.S.	424 000
a	Anchors & Miscellaneous		L.S.	100 000
b	Discharge Pipe—36"ø		L.S.	100 000
c	Support structure for discharge pipe	500 000 lbs	0 50	250 000
d	Support structure guides	100 000 lbs	0 50	50 000
e	Miscellaneous items		L.S.	76 000
		Sub-total Floating Skimmer		1 000 000
2	Helical Chute		L.S.	200 000
3	Gates & Hoists		L.S.	100 000
		Total		$1,300,000

Back up data—Nez Perce by RB (3/6/61)

(16282)

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HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 7 of 9 Pages
Structure Imnaha Fish Barrier Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	D/S Migrants			$(U.S. dollar)
1	Diversion		L.S.	250 000
2	Excavation	2,400 CY	5 00	12 000
3	Concrete			
a	Spillway & Piers	2,400 CY	35 00	84 000
b	Rt. Bank Abutment	815 CY	35 00	28 500
4	Adjustable Trashrack	30,800 lbs	0 50	15 400
5	Alum. Louver bars	56,700 lbs	1 00	56 700
6a	Regulating Gates	7 880 lbs	0 35	5 900
b	Regulating Gates Guides	1 560 lbs	0 50	800
c	Regulating Gates Hoists	3 000 lbs	1 10	3 300
7	Piping—36"ø	100,000 lbs	0 35	35 000
8	Log Boom	100 LF	50 00	5 000
9	Grating	11 700 lbs	0 55	6 400
		Sub-total		$503 000
10	Secondary Louver System			
a	Concrete	500 CY	60 00	30 000
b	Alum. Louver Bars	6 000 lbs	1 00	6 000
c	Piping—24"ø	1,185,000 lbs	0 35	415 000
d	Piping—36"ø	26,000 lbs	0 35	9 100
11	Access Road—1ml., 500' drop		L.S.	200 000
		Sub-total		$660,100
12	Miscl. Electrical Items		L.S.	40 000
13	Miscl. Mechanical Items		L.S.	10 000
		Sub-total		$50 000
		Total		$1,213,100
		Use		$1,213,000

Back up data—Nez Perce by RB (3/6/61) (page 59A)

16283

HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep—254 Date 4/20/61 Page 8 of 9 Pages
Structure Snake River Loading Stations
D/S of Hell's Canyon Estimated by JMH Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	D/S Migrants			$(U.S. dollars)
A	Downstream Migrant Loading Station			
1	Concrete	1 100 CY	100 00	110 000
B	Downstream Migrant Loading Station			
1	Concrete	500 CY	100 00	50 000
C	Piping—24"ø	1,690,000 CY	0 35	592 000
D	Misc. Electrical Items		L.S.	10 000
E	Misc. Electrical Items		L.S.	5 000
		Sub total		$767 000
		Total		$767,000

Back up data—Nez Perce by RB 3/6/61 page 62A

16284

HARZA ENGINEERING COMPANY
Chicago, Illinois

ESTIMATE

Project High Mountain Sheep — Date 4-20-61 — Page 9 of 9 Pages
Structure Fish Facilities — Estimated by JMH — Checked by RB

Item No.	Item	Quantity	Unit Price	Amount
	SUMMARY			$(U.S. dollars)
	UPSTREAM MIGRANT FACILITIES			
1	High Mountain Sheep Dam			
2	Fish Collection Channel & Fish Ladder			5,205,000
	b Pumphouse			1,830,000
	c Pressure Lock			861,000
2	Imnaha Fish Barrier			200,000
			Subtotal Say	$8,096,000
	DOWNSTREAM MIGRANT FACILITIES			
1	High Mountain Sheep Dam			1,300,000
2	Imnaha Fish Barrier			1,213,000
3	Migrant Facilities Below Hell's Canyon			
	Contingencies			767,000
			Subtotal	$3,280,000
			Total say	$11,376,000
			Contingencies	1,704,000
			Total	$13,080,000

16543

Hearing Exhibit No. FPC 37

HEADQUARTERS
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON 25, D. C.

In reply refer to
ENGCW-E

24 February, 1960

Filed with Exrs. Certification dated Oct. 8, 1962

Chairman
Federal Power Commission
Washington 25, D. C.

Dear Mr. Chairman:

Reference is made to the Commission's letter dated 21 October, 1959, concerning the amended application filed by the Pacific Northwest Power Company for a license for the proposed High Mountain Sheep Project (No. 2243) to be located on the Snake River in Idaho and Oregon.

The applicant's proposed project would be located about river mile 189 on the Snake River, about one half mile above the junction of the Snake and Salmon Rivers. The top normal pool would be about elevation 1510 without surcharge at the dam. The estimated total reservoir capacity would be about 3,600,000 acre-feet of which 3,100,000 would be usable. The applicant has stated in the amended application for license, that it proposes to: (1) construct, maintain and operate fish handling and protective devices; (2) provide conduits and valves and other suitable equipment for flood control facilities and (3) operate the project with consideration of downstream flow conditions for fishery, recreation, and navigation interests. The proposed opera-

tion for flood control under certain run-off conditions would impair the normal power capability to be expected and the applicant states that this lost capacity would require replacement or compensation for the loss of power. This flood control plan and the amount of replacement or compensation are not discussed in detail in the amended application.

The Division Engineer, North Pacific Division, has recently completed a review report dated June 1958 on the water resources development of the Columbia River Basin. He recommended a project at the same site which would serve the same purposes as that of the applicant. The River and Harbor Board's June 1959 report and my undated proposed report reviewed the report of the Division Engineer and recommended the development of the High Mountain Sheep Project,

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among other projects, as a part of the major water plan. These reports were forwarded to you by letter of 9 January 1960 for your views, prior to submission to Congress. In my proposed report I noted that the applicant had submitted a request to the Federal Power Commission for a license and my views were that any development at the High Mountain Sheep site should be equal in scope and purposes to the project I propose to recommend.

The scope of the project and purposes served as proposed by the applicant would be substantially the same as those which I proposed. However, certain provisions in regard to operating the project should be inserted in a lisense, if issued, in order to assure approximately the same degree of resource development.

It is my view that the project should be operated for flood control as recommended in my proposed report as a

part of the comprehensive basin development. Legislation by Congress would be required however, before authority would be available to compensate, in kind or in money, for losses of power occurring during flood control operations. Details of a flood control operating procedure have been explored in a preliminary manner and it is contemplated that operation for flood control should be somewhat as follows:

a. The total live storage space of about 2,250,000 acre-feet between elevation 1337 and elevation 1510 mean sea level will be made available for flood control use if and as required.

b. The reservoir level will be no higher than elevation 1475 by 1 March each year to provide about 600,000 acre-feet of storage space for flood control use at that time each year. Additional storage space will be made available between 1 March and the beginning of the flood period to insure the availability on 1 May of the total capacity needed for flood control as estimated by the Corps of Engineers.

c. The space made available as set forth above will be retained until capture of flood flows is requested by the Corps of Engineers, subject to involuntary storage as may be required due to excess of inflows over outlet capacity, or until refilling is authorized by the Corps of Engineers. In the event of involuntary storage during flood control operations, full storage capability will be regained as soon as possible.

d. During the flood storage period controlled outflows will be as warranted by the flood control requirements as determined

by the Corps of Engineers with due regard to the requirements for the optimum multiple purpose operation of the

project. When the Columbia River discharge at The Dalles is 600,000 c.f.s. or higher, the daily outflow may be reduced to 10,000 acre-feet, except that during years of severe flood conditions, the daily outflow may be reduced to as low as 4,000 acre-feet; below 600,000 c.f.s. discharge at The Dalles, the daily outflow will be determined with due consideration given to all purposes of the project.

e. A discharge capacity of 65,000 c.f.s. at minimum pool elevation 1382 is to be provided by the Licensee. This discharge capacity is based on the gated outlet capacity plus one half of the ultimate turbine hydraulic capacity.

A discussion of the status of the navigation project on the Snake River is included in Chapter IV of the Division Engineer's Report, dated June 1958. The improvement of the existing navigation channel above Lime Point (mile 172) is not recommended at this time. The construction of a Dam at the Asotin site would provide slack water to Lime Point but lock facilities at the Asotin project are not recommended at this time. Pending development of the Snake River between Lewiston, Idaho and the High Mountain Sheep site, the magnitude of flows from the High Mountain Sheep Project would affect the interest of navigation. I recommend that the license include the Federal Power Act by reference, Articles 9 and 18 of the Commission's Form L-6 dated 15 December 1953, and the following conditions in the interest of navigation:

a. Minimum flow of not less than 13,000 c.f.s. will be maintained at Lime Point, Idaho, during annual storage refill season when determined to be required by the Corps of Engineers in the interest of navigation. Flows of up to 16,500 c.f.s. may be required at other times when determined by the Corps of Engineers to be necessary in the interest of navigation.

b. River fluctuations in the reach between Lewiston and Lime Point resulting from project operation shall not

exceed a rate of one and a half feet per hour on the rising stage, and one foot per hour on the falling stage unless otherwise approved by the Corps of Engineers.

Exisiting and authorized projects downstream from the project under consideration could be affected by its operation for power. As indicated previously, in this letter, our reports on review of

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the plan for the Columbia River Basin have been furnished to you. The High Mountain Sheep Project for which application has been filed is an element of the plan presented in those reports. I consider therefore, that any license issued should provide for power operation in general conformity with the requirements of that plan.

I recommend that the license, if issued, contain a provision to the effect that details of an operating procedure, needed in carrying out the flood control functions of the project as outlined generally in this letter, shall be included in a working agreement between the Corps of Engineers and the Licensee. The agreement should be approved by the Federal Power Commission and included as a part of the license by reference. The agreement would be subject to review from time to time as requested by the Licensee or the Corps of Engineers.

One copy of the amended application for license has been lost in the mails. The other copy submitted with your letter has been retained for the files of this office.

Sincerely yours,

E. C. ITSCHNER
E. C. Itschner
Lieutenant General, USA
Chief of Engineers

16598

Hearing Exhibit No. FPC 42

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Nov. 21, 1960

Filed with Exrs. Certification dated Oct. 8, 1962

Dear Mr. Kuykendall:

This is in reply to your letters of October 21, 1959, and March 25, 1960, requesting the comments of this Department on the amended application for major license for the proposed Mountain Sheep Project (FPC No. 2243) and for the proposed Nez Perce Project (FPC No. 2273), respectively.

In carrying out this Department's responsibility for the protection and conservation of the vital Northwest anadromous fishery resource and in light of the fact that the power to be available as a result of ratification of the proposed Columbia River treaty with Canada will provide needed time which can be devoted to further efforts to resolve the fishery problems presently posed by these applications, we believe that it is unnecessary at this time and for some years to come to undertake any project in this area.

You may be assured that the Fish and Wildlife Service of this Department will continue, with renewed emphasis, the engineering and research studies that must be done before we can be assured that the passage of anadromous fish can be provided for at these proposed projects.

As you know, during the course of this Department's consideration of the applications of the High Mountain

Sheep and Nez Perce sites our Government has been actively engaged in the negotiation of a treay with Canada for the development of storage projects on the upper Columbia River. On October 19 the President announced this Government's approval of the recommended proposals for the cooperative development of the Columbia River Basin in Canada and the United States. Simultaneously, Prime Minister Diefenbaker announced the approval of the Government of Canada. Enclosed are the "Analysis and Progress Report" which sets out the text of the recommended proposals and the analysis thereof by the United States negotiating team, the President's announcements of October 19 and the Department of the Interior's information release of the same date.

The recommended proposals envisage the construction on the Columbia River, in Canada, within a 10-year period of reservoirs providing 15.5 million acre-feet of storage. The proposals also would clear the way for construction by the United States, at its option, of the Libby Project, authorized by the Congress in 1950, on the Kootenai River in northern Montana. The Libby Project contains about 5 million acre-feet of additional storage.

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The President has indicated that he intends to submit a treaty embodying the recommended proposals to the Senate for ratification early in January. Ratification of the treaty will immediately initiate the construction of the 15.5 million acre-feet of storage in Canada and undoubtedly will result in an early start on the 5 million acre-feet of storage at the Libby site.

The addition of this amount of new storage, some 20.5 million acre-feet, will increase the controlled storage on the Columbia River to approximately 33 million acre-feet which results in an entirely new regimen for the river in

which the 1894 flood is completely controlled at The Dalles to an estimated 720,000 c.f.s. and the storage withdrawal period for power operations is increased from 7½ months to 20 months.

This means that the prime power capability (as well as the flood control impact) of all future projects such as Nez Perce and High Mountain Sheep must be re-evaluated in light of the new development called for in the proposed Canadian treaty.

It also means that the United States will have available to it a minimum of an additional 1,686,000 kw of prime power to meet anticipated load growth. In addition, it clears the way for, and makes much more attractive, such projects as Wells, for which a license application is now pending, with an estimated prime power capability of about 355,000 kw and Kootenai Falls with an estimated prime power capability of about 105,000 kw, which will become feasible and desirable after Libby comes into operation.

The Chief of Engineers in his proposed "308 Report" to the Secretary of the Army indicated that his consideration of the timing of either of the projects, Nez Perce or High Mountain Sheep, is necessarily directly related to the timing and availability of additional power resources which could be developed from Canadian storage and Libby.

Based on average load projections of the 1955-1985 period, the Chief of Engineers indicated that absent Canadian storage and Libby, it would be necessary, from the point of view of power, to start advance engineering and detailed design for a project with capabilities of High Mountain Sheep in 1965 (1962, under maximum load predictions). The proposed report is now undergoing review by the Chief of Engineers to reflect the impact of the Canadian agreement, of which he is one of the negotiators.

However, his observations do indicate, at least in a general way, the impact of the availability of power due to Canadian storage and Libby on the Middle Snake area as a potential site for hydroelectric development. They are referred to here for that purpose. In this connection, may we note that load estimates projected by the Commission staff in these proceedings do not meet the "308 Report" minimum projection until 1965 nor the average until 1970.

16600

The current load and resource forecast of the Bonneville Power Administration for the area it serves is set out in the enclosed "Power Outlook 1960-70." The attached table shows the effect of Canadian storage and Libby upon the power supply picture depicted in table 3 at page 9 of the "Power Outlook." As the tabulation indicates, having available the power resources created by Canadian storage and Libby, planning of projects for this reach of the river could safely be delayed for a number of years even without considering the additional power that would come from the addition of Wells and Kootenai Falls. These projects could extend the time still further, as could also be the case in the event nuclear power materialized at Hanford in the 1960-1970 period. This possibility, as you know, has been under intensive study by your staff for the Atomic Energy Commission, in which study the staff of the Bonneville Power Administration participated. In addition, for limited periods, some of Canada's share of the power may be available to the United States market. In all, the possibilities are such that even with an allowance for the addition of a very considerable new industrial load on the Bonneville system, at least five to six years' time can be realized without considering either Mountain Sheep or Nez Perce.

(16600)

The President, in the White House statement of October 19, stated that,

> "Due to the location of this proposed storage, there will be no interference with the cycle for salmon and other anadromous fish, which constitute such an important and recreational asset for the people of the Pacific Northwest.
>
> "The large block of flood control storage and power that will be realized over the next decade as a result of this cooperative undertaking affords us a greater degree of selectivity in the planning and timing of potential domestic projects in order to take into fullest consideration conservation as well as purely economic needs. Sorely needed time will be gained which can be devoted to the research and study which must go into the solution of the problem, particularly pressing today in our Northwest states, of harmonizing construction of large storage dams with fish and wildlife needs. In this way the agreement can make a maximum contribution to the fostering of conservation in its highest sense, the optimum harmonization of our multipurpose needs."

For this reason, we are impelled to advise that initiation of a project in the Middle Snake area is not requisite at this time.

The experience of recent years amply demonstrates the need for a period of time that can be devoted to further research and experimentation in the handling of anadromous fish before additional

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construction is undertaken in this area. We need not restate here, for the facts are well known to the Commission,

the difficulties that have been experienced in connection with fish passage facilities at the Oxbow and Brownlee projects. We would, in this connection, merely refer to our letters to the Commission discussing these matters. Similarly, testimony given by fishery experts of this Department in previous hearings affecting the Middle Snake area has amply indicated the scope of the fishery resource involved and the magnitude of the problems posed by the further project construction in the area at this time. Only a brief resume of the impact of each of the projects for which an application is pending on the fishery resource of the Columbia need, therefore, be set out in this letter.

The proposed Nez Perce project would affect runs of anadromous fish that utilize spawning and rearing areas in the main Snake River upsteam from licensed Idaho Power Company projects, in the Salmon and Imnaha Rivers, and in other tributaries of lesser importance. The commercial and sport fisheries dependent on Middle Snake River production are worth millions of dollars annually. The Snake River produces about 40 percent of all the salmon and steelhead trout of the Columbia River Basin, and that portion of the Snake River Basin lying above Nez Perce damsite accounts for three-fourths of the Snake River production. The Salmon River is by far the most important fish producing tributary in the entire Columbia River Basin. The Salmon River is estimated to provide about 50 percent of the entire production af anadromous fish in the Snake River. The Salmon and Imnaha Rivers are in rugged, primitive country, and furnish outstanding habitat and water conditions for the production of the particularly valuable spring chinooks and steelheads. In addition, the Salmon River system is one of three remaining production areas of blueback salmon in the Columbia River Basin. The only other rivers still producing bluebacks are the Wenatchee and Okanogan. Resident game

fish would also be affected adversely by the proposed project.

The proposed High Mountain Sheep Reservoir, in addition to affecting runs going up the Snake River, would flood the lower nine miles of the Imnaha River. The applicant has indicated its willingness to expend considerable sums on the construction and operation of unique and elaborate facilities for the preservation of the Imnaha River fish runs. However, these facilities are unproved. Moreover, the application associates the proposed project with the Lower Canyon project on the Salmon River as providing substantially the same development as the Nez Perce project. The Salmon River is estimated to provide about 50 percent of the entire production of

anadromous fish in the Snake River. There are at present no known means for protecting the fishery resources of the Salmon River if either the Lower Canyon or Nez Perce project were constructed.

As between the two projects, the Nez Perce project would have the greater impact upon anadromous fish, particularly in view of the larger runs that would be affected. However, for reasons already set out, in this Department's view, conservation in the fullest sense calls for a deferral while full advantage is taken of the opportunity presented by Canadian storage and Libby.

Advice as to fishways under Section 18 of the Federal Power Act will be forthcoming at a later date. With respect to other issues presented by the pending applications, the following comments are offered.

The Fish and Wildlife Service reports that mule deer are the only big game species utilizing the Nez Perce site. Many of these deer are permanent residents, occupying the

Hells Canyon of the Snake River and the lower reaches of he Salmon and Imnaha Rivers. Other wildlife that utilize he Nez Perce project area include valley quails, mountain uails, Hungarian partridges, chukar partridges, blue rouse, ruffed grouse, mourning doves, otters, beavers, uskrats, raccoons, coyotes, badgers, shunks, Canada geese, allards, pintails, cinnamon teal, and goldeneyes. Several housand acres of mule deer range would be inundated and here would be a moderate reduction in the number of deer s a result of loss of range. There would be losses of pland game, fur animals, and waterfowl. Reservoir argins would be barren and unattractive to all wildlife roups. Waterfowl use of the reservoir would be insignifi- ant. There does not appear to be any feasible means of itigating wildlife losses.

There is a sizable population of mule deer in the High lountain Sheep project area. Elk and a few white-tailed eer also utilize the area. Valley quails, mountain quails, ungarian partridges and chukar partridges comprise ost of the upland game population in the reservoir area. here are small numbers of both blue and ruffed grouse. tters, beavers, and muskrats are the most important fur imals, but are not abundant. The area is used by ducks, anada geese, and mourning doves during migration. intering populations of migratory waterfowl are low. here is some goose and duck nesting in the area. It is lieved that adverse effects of the proposed project on ildlife could be mitigated.

16603

Each of the proposed project developments is located ownstream from extensive existing, proposed, and poten- al water utilization projects in the upper Snake River asin. To be feasible these future irrigation developments ust have an assured water supply free from downstream

encumbrances. If either application for license is granted, the following stipulation is requested for inclusion:

> The use of the waters of the Snake River and its tributaries in connection with works constructed pursuant to this license shall be subordinated to all existing and future depletion of streamflow attributable to future downstream diversions for irrigation and other beneficial consumptive uses.

Each of the projects, if constructed, should be fully integrated and coordinated electrically and hydraulically with the Northwest Power Pool through the Bonneville Power Administration transmission grid.

Any license, if issued, should also provide that rights-of-way granted across Federal lands for transmission lines constructed in connection with the project are subject to the prior rights for any future Federal reclamation projects, and that any adjustments in said transmission lines required by the construction of any future Federal reservoirs, canals, pipelines, ditches, drains, access roads, etc., shall be made at the expense of the licensee.

Exhibit H in the Mountain Sheep application states:

> "The reservoir will be operated for flood control after March 1 on instruction from the Corps of Engineers. Operation for flood control will, under certain runoff conditions, impair the power capacity of the project which will require replacement or compensation."

Such replacement or compensation would require legislation.

To the extent that either applicant has received valuable information and data from the Bureau of Reclamation and the Corps of Engineers in connection with their project

investigations, it is requested that any license require equitable reimbursement to the Federal Government for such data beneficially utilized by the applicant.

The National Park Service reports that the reservoir area involved in these applications offers great potentials for archeology. It is, therefore, recommended that a license, if issued, provide that the licensee make available an amount not to exceed $44,000, or $7,500 in the case of Mountain Sheep, to the Idaho State College for the purpose of undertaking an archeological survey and salvage excavations prior to construction and flooding.

16604

The Bureau of Mines suggests that a full and complete examination and report regarding the mineral situation in the areas not covered by the application for FPC Project No. 2173 be made by a recognized competent mine examination engineer. The Geological Survey reports that the additional lands affected by the application for project No. 2273 contain placer gold deposits in bars and benches at numerous places along the Salmon River throughout the reach involved. Values range from a few cents to more than $1.00 per yard.

Sincerely yours,

ELMER O. BENNETT
Secretary of the Interior

Hon. Jerome K. Kuykendall, Chairman
Federal Power Commission
Washington 25, D. C.

Enclosures

AN ESTIMATE OF POWER SITUATION, WEST GROUP AREA, 1961-62 through 1970-71
Critical Prime Power Period

Item	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
	(Thousands of Average Kilowatts)									
1. Area Firm Power Surplus or (Deficit) from Table 3—1960-70 "Power Outlook"[1]	776	492	408	223	(117)	(492)	(198)	(506)	(963)	(1,445)
2. Canadian Storage & Libby[1]	—	—	—	—	—	792	1,184	1,356	1,487	1,585
3. Surplus or (Deficit) After Canadian Storage[1]	776	492	408	223	(117)[2]	300	986	850	524	140

[1] After losses to the load centers and reserves.

[2] Deficit could be eliminated by anticipated partial availability of Canadian storage in 4th year following treaty ratification.

New Resources—Estimated Dates of Initial Operation:

Line 2

Duncan Lake, July 1966
Arrow Lakes, July 1966
Libby—Storage, Sept. 1967
Libby—Generation, Sept. 1968
Mica—4 million A.F., July 1969
Mica—7 million A.F., July 1970

16606

Hearing Exhibit No. FPC 42-A

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Dec. 7, 1960

Filed with Exrs. Certification dated Oct. 8, 1962

Dear Mr. Kuykendall:

In our letter of November 21—commenting on the applications for license for the proposed Mountain Sheep Project (FPC Project No. 2243) and for the proposed Nez Perce Project (FPC Project No. 2273), the following inadvertent errors were made:

The word "not" was omitted from the last sentence of the last paragraph on page 5. The sentence should read as follows: "It is believed that adverse effects of the proposed project on wildlife could not be mitigated."

The word "downstream" in the stipulation set out on page 6 should read "upstream."

In the last paragraph on page 6 the figure "$44,000" should read "$50,000."

We regret any inconvenience that may have been caused by the foregoing inadvertences.

Sincerely yours,

ELMER O. BENNETT
Under Secretary of the Interior

Hon. Jerome K. Kuykendall
Chairman
Federal Power Commission
Washington 25, D. C.

16607

Hearing Exhibit No. FPC 42-B

UNITED STATES DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY

Mar. 15, 1961

Filed with Exrs. Certification dated Oct. 8, 1962

Dear Mr. Kuykendall:

On November 21, 1960, the Department commented on the amended application for major licenses for the proposed Mountain Sheep Project (FPC No. 2243) and for the proposed Nez Perce Project (FPC No. 2273). The Department of the Interior's position on these applications has been reviewed and we now desire to supplement our letter of November 21, 1960.

In the view of this Administration there are few more important problems before the Nation than the proper development and conservation of our natural resources. As the President stated in his recent message to the Congress:

> "This is not a matter of concern for only one section of the country. All those who fish and hunt, who build industrial centers, who need electricity to light their homes and lighten their burdens, who require water for home, industrial, and recreational purposes—in short, every citizen in every state of the Union—all have a stake in a sound resources program under the progressive principles of national leadership first forged by Pinchot and Theodore Roosevelt, and backed by the essential cooperation of state and local governments."

The Administration desires that in the case of the Middle Snake area decisions be based upon thorough investigation.

In discussions with our fish biologists, we have concluded that a solution to the problem of downstream fish passage has not yet been found either for the proposed High Mountain Sheep Project nor the proposed Nez Perce Project.

We are unwilling to postpone vigorous attack upon this problem. The acknowledged need for full development of the hydroelectric resources of the Nation in a manner consistent with other natural resources affected will not permit procrastination. With the concurrence of the President, the Department therefore has decided upon a crash program to try to find the answers, and will shortly request from Congress the necessary funds to finance this program. We believe there should be field tests on the Snake River of methods of getting fingerlings safely through deep reservoirs and high dams.

16609

Our objective is not merely to find ways to save the salmon runs in the Middle Snake and Salmon rivers. We want, in addition, to develop fish passage facilities that will save the salmon runs in the Immaha and the upper Snake and its tributaries.

We have set the end of 1964 as the target date by which time to learn as much as possible the direction in which a sound development program should go. We believe that potential alternative sources of new power make prudent such a delay in further consideration of projects for the Middle Snake.

Pending completion of the accelerated fish studies, it would serve no useful purpose for personnel of the Department to appear as witnesses in the pending proceedings. We are, therefore, recalling permission heretofore granted for them to appear as witnesses.

For the reasons above stated, the Department of the Interior recommends that neither the proposed High Mountain Sheep Project nor the proposed Nez Perce Project be licensed at this time. The Administration is hopeful that in the light of these circumstances, the Commission can recess or suspend the present hearing for the duration of the study period. The Department of the Interior should be in a much better position to recommend a desirable program for the Middle Snake River development at that time.

Sincerely yours,

STEWART UDALL
Secretary of the Interior

Hon. Jerome K. Kuykendall,
Chairman
Federal Power Commission
Washington 25, D. C.

16609-16613

CERTIFICATE OF SERVICE

25037

Project No. 2173

BEFORE FEDERAL POWER COMMISSION

Application for Preliminary Permit

FOR

MOUNTAIN SHEEP HYDROELECTRIC PROJECT
ON THE LOWER SNAKE RIVER
IN THE STATES OF IDAHO AND OREGON

AND

PLEASANT VALLEY HYDROELECTRIC PROJECT
ON THE LOWER SNAKE RIVER
IN THE STATES OF IDAHO AND OREGON

BY

PACIFIC NORTHWEST POWER COMPANY

October 1954

25038

BEFORE FEDERAL POWER COMMISSION

Project No. 2173

APPLICATION FOR PRELIMINARY PERMIT FOR MOUNTAIN SHEEP HYDROELECTRIC PROJECT ON THE LOWER SNAKE RIVER IN THE STATES OF IDAHO AND OREGON, AND THE PLEASANT VALLEY HYDROELECTRIC PROJECT ON THE LOWER SNAKE RIVER IN THE STATES OF IDAHO AND OREGON, BY PACIFIC NORTHWEST POWER COMPANY, PORTLAND, OREGON.

Application

1. Pacific Northwest Power Company, a corporation organized under the laws of the State of Oregon and having its office and principal place of business in Portland, in the

State of Oregon, referred to sometimes herein as "the Applicant", desiring to obtain a license under the Federal Power Act, hereby makes application to the Federal Power Commission for a preliminary permit for thirty-six months, for the project described herein. This application is made in order that the Applicant may secure and maintain priority for a license under the Federal Power Act while procuring data and performing the acts necessary to perfect an application for such license.

2. The name, title, and post office address of the person to whom correspondence in regard to this application shall be addressed are:

Mr. W. E. Parrott, Secretary
Pacific Northwest Power Company
P. O. Box 1445
Spokane 10, Washington

25039

The Commission is also requested to mail copies of all of its communications with regard to this application to:

Mr. M. O. Leighton
910 - 17th Street, N. W.
Washington 6, D. C.

who is the Applicant's accredited representative at Washington, D. C.

3. The Applicant is a corporation organized under the laws of the State of Oregon, and is qualified to do business in and under the laws of the states of Washington and Idaho.

4. The measure of control or ownership by or over the Applicant in any other organization is as follows:

The Applicant has a total of 500 shares outstanding of its common stock. One hundred shares are owned:

by The Montana Power Company, Butte, Montana; one hundred shares by The Washington Water Power Company, Spokane, Washington; two hundred shares by Pacific Power & Light Company, Portland, Oregon, one hundred of which Pacific holds as successor to Mountain States Power Company; and one hundred shares by Portland General Electric Company, Portland, Oregon.

The Applicant exercises no control or ownership over ny other organization.

5. The Applicant proposes to operate in the states of daho, Montana, Oregon and Washington.

25040

6. The location of the projects applied for is as follows:

(a) In the states of Idaho and Oregon.

(b) Mountain Sheep and Pleasant Valley Projects in Idaho County, Idaho, and Wallowa County, Oregon.

(c) On the following named stream: Snake River; carrying commerce to the following extent; no knowledge of any present commerce.

(d) In the region of the following named communities: Mountain Sheep Project 18 miles northeast of Imnaha, Oregon, and Pleasant Valley Project 10 miles southwest of Whitebird, Idaho.

7. Lands of the United States which will be affected are cated in Wallowa National Forest for the Mountain eep Project and in Wallowa, Weiser and Nez Perce tional Forests for the Pleasant Valley Project, accord- g to present information available.

8. The Mountain Sheep dam would be a concrete arch m with a top elevation approximately 1108 feet above

mean sea level. The reservoir will be approximately 20.6 miles long with backwater reaching to the Pleasant Valley site. The powerhouse would be a reinforced concrete structure with provision for installation of 250,000 kilowatts of generation capacity. Estimated average annual output will be 1,120,000,000 kwh alone, 1,160,000,000 kwh with Pleasant Valley, without regard to the effect of other possible upstream dams in the Snake River.

The Pleasant Valley dam would be a concrete arch dam with a top elevation of approximately 1475 feet above mean sea level. The reservoir will be approximately 34 miles long and will contain approximately 850,000 acre feet of storage capacity, of which approximately 300,000 acre

feet will be usable for power, flood control, and other beneficial uses. The Pleasant Valley powerhouse would be a reinforced concrete structure with provisions for installation of 600,000 kilowatts of generating capacity. Estimated average annual output will be 2,510,000,000 kwh without regard to the effect of other possible upstream dams in the Snake River.

9. The Applicant has been incorporated by the four companies, which are the owners of all the outstanding stock of the Applicant company, as a generating company for the purposes of developing hydroelectric sites and furnishing power generated at such sites to the owning companies.* It is expected that arrangements can be made to deliver the power generated, through the facilities of the Northwest Power Pool, to the systems of the four companies. In any case, it is proposed that power generated

* Applicant is also authorized by its charter to sell electricity to other utilities, public agencies and public utility districts, cooperatives, and wholesale consumers, but has no present plans or intention to do so.

be marketed by the four companies in their respective rketing areas. The Applicant owns and operates no er power plant but has received a Preliminary Permit Project No. 2147.

0. The following exhibits are submitted herewith:

25042

ibit nber	*Contents*
A	(a) Certificate of Organization of Pacific Northwest Power Company
	(b) Articles of Incorporation of Pacific Northwest Power Company
	(c) Bylaws of Pacific Northwest Power Company
	(d) Certificate of Good Standing of Pacific Northwest Power Company in State of Idaho
	(e) Certificate of Good Standing of Pacific Northwest Power Company in State of Washington
B	Certified copy of resolution of Board of Directors of Pacific Northwest Power Company, directing its officers to make application for preliminary permit
	Statement of Project Data Available
	Statement of Proposed Work under Preliminary Permit
	Water Rights
and I	General Map of Proposed Projects, Sheets 1 and 2

WITNESS WHEREOF, Pacific Northwest Power Com-, the Applicant herein, has caused its name to be here-

unto signed by K. M. Robinson, its president, and its corporate seal to be hereto affixed by W. E. Parrott, its secretary, thereunto duly authorized this 25th day of October, 1964.

PACIFIC NORTHWEST POWER COMPANY

By K. M. ROBINSON
President

ATTEST:

W. E. PARROTT
Secretary

(Seal)

25043

STATE OF WASHINGTON } ss.
County of Spokane }

K. M. Robinson, being first duly sworn, deposes and says: That he is president of Pacific Northwest Power Company, the Applicant for preliminary permit; that he has read the foregoing application, knows the contents thereof, and that the same are true to the best of his knowledge and belief.

K. M. ROBINSON

Subscribed and sworn to before me this 25th day of October, 1954.

E. B. TALKINGTON
Notary Public in and for the State of Washington, residing at Spokane.

(Seal)

25063

EXHIBIT B

PACIFIC NORTHWEST POWER COMPANY

CERTIFIED COPY OF RESOLUTIONS

W. E. PARROTT, the duly elected and acting secretary acific Northwest Power Company, an Oregon corpora- hereby certify that the following is a full and true of certain resolutions duly adopted by its Board of ctors at a special meeting held on the 17th day of ıst, 1954, to wit:

"BE IT RESOLVED, that the Board of Directors of PACIFIC NORTHWEST POWER COMPANY (the Company) does hereby direct and authorize the officers and directors of the Company, in its name and behalf, to apply to the Federal Power Commission for a Pre- liminary Permit or Permits under the terms of and in accordance with the Federal Power Act to make studies, surveys, and investigations of the feasibility of hydroelectric power developments in the vicinity of the Mountain Sheep and Pleasant Valley Hydro- electric Sites on the Snake River, in the states of Idaho and Oregon, for the purpose of enabling the Company to secure the data and perform the acts required by law for filing an Application or Applica- tions for the issuance of a license or licenses; and

"BE IT FURTHER RESOLVED, that said officers are hereby authorized to enter into such contract or contracts, or make such arrangements and execute such documents for and in the Company's name, as may be necessary, advisable, or appropriate to carry out the purposes of the foregoing resolutions."

I further certify that said resolutions have not been rescinded or modified and are in full force on the date of this certificate.

WITNESS my hand and the seal of Pacific Northwest Power Company this 25th day of October, 1954.

W. E. PARROTT
Secretary

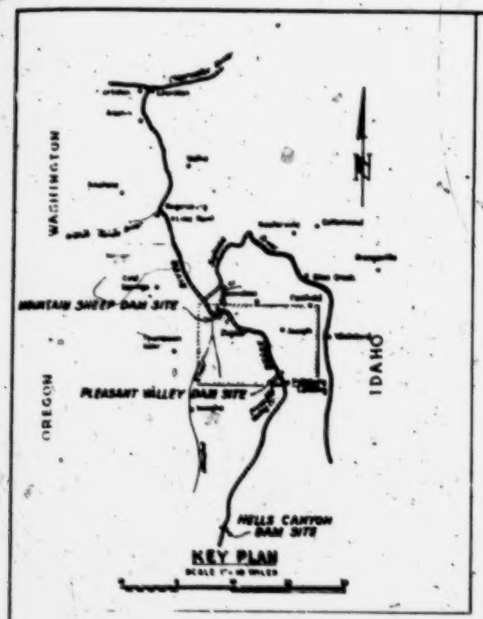
(Seal)

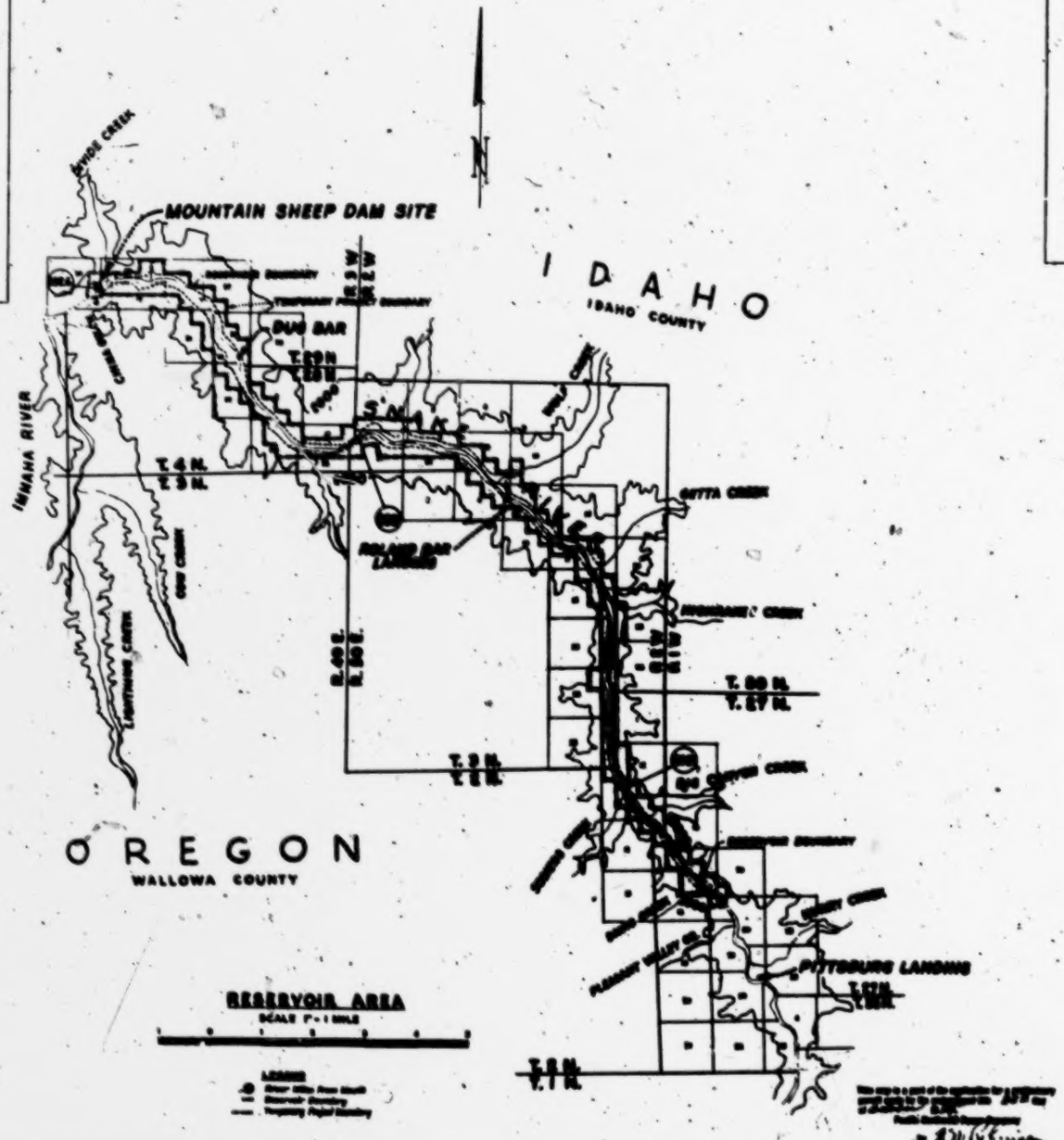
CERTIFICATE

The foregoing certified copy of a Resolution of the Board of Directors of Pacific Northwest Power Company is part of the Application for Preliminary Permit for the Mountain Sheep and Pleasant Valley hydroelectric projects made by the undersigned this 25th day of October, 1954.

PACIFIC NORTHWEST POWER COMPANY

By K. M. ROBINSON
President





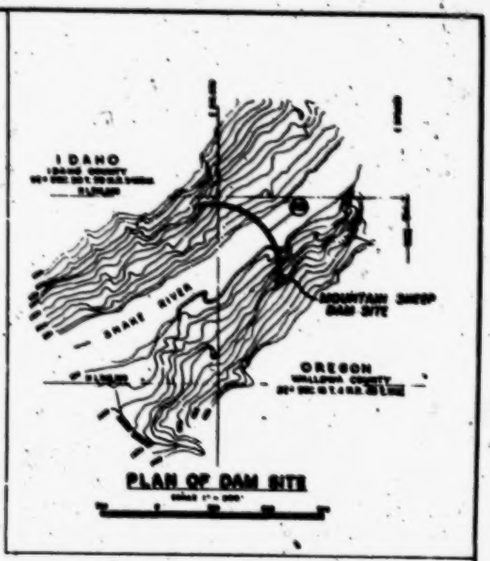
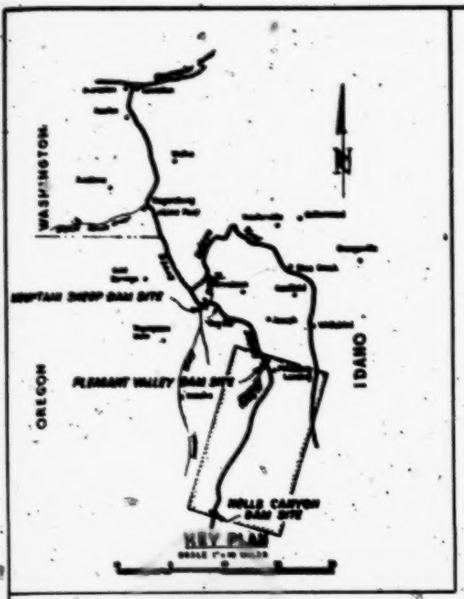
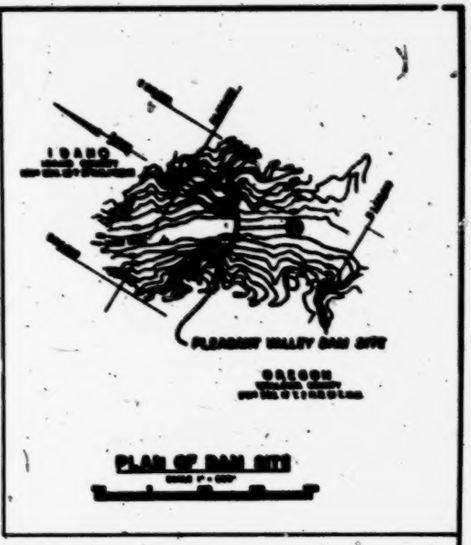


EXHIBIT M-L SHEET 1 OF 2 SHEETS
MOUNTAIN SHEEP PROJECT
GENERAL MAP
PRELIMINARY PERMIT ISSUED
BY ORDER

(25066(2))





I D A H O

IDAHO COUNTY

SNAKE RIVER

O R E G O N

WALLOWA COUNTY

PLEASANT VALLEY DAM SITE

RESERVOIR AREA

EXHIBIT M - L SHEET 2 OF 2 SHEETS
PLEASANT VALLEY PROJECT
GENERAL MAP

NOT ISSUED

25068

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Claude L. Draper, Nelson Lee Smith, Seaborn L. Digby and Frederick Stueck.

Project No. 2173

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Order Issuing Preliminary Permit

Application was filed November 9, 1954 by Pacific Northwest Power Company, of Portland, Oregon, for a preliminary permit under the Federal Power Act (hereinafter referred to as the Act) for proposed Project No. 2173, to be located on Snake River, navigable waters of the United States, in Idaho County, Idaho, and Wallowa County, Oregon, and affecting lands of the United States within Wallowa, Weiser and Nez Perce National Forests.

As described in the application, the proposed project would consist of two water-power developments designated as Mountain Sheep and Pleasant Valley and described respectively as:

(a) *Mountain Sheep* consisting of a concrete arch dam with a top elevation of approximately 1108 feet (m.s.l.) located at river mile 192.6 in SE¼ Sec. 30, T. 29 N., R. 3 W., B.M., Idaho, and SE¼ Sec. 18, T. 4 N., R. 49 E., W.M., Oregon, creating a reservoir extending about 20.6 miles to the Pleasant Valley site; a powerhouse with provision for installation of

250,000 kilowatts of generating capacity and appurtenant facilities, and

(b) *Pleasant Valley* consisting of a concrete arch dam with a top elevation of approximately 1475 feet (m.s.l.) located at river mile 213.2 in NW¼ Sec. 29, T. 27 N., R. 1 W., B.M., Idaho, and SW¼ Sec. 17, T. 2 N., R. 51 E., W.M., Oregon, creating a reservoir extending about 34 miles to Hells Canyon dam site containing about 850,000 acre-feet of storage capacity of which about 300,000 acre-feet will be usable for power, flood control, and other beneficial uses; a powerhouse with provision for installation of 600,000 kilowatts of generating capacity and appurtenant facilities.

The energy generated by the proposed project is expected to be distributed through the transmission facilities of the Northwest Power Pool to the four companies (The Montana Power Company, The Washington Water Power Company, Pacific Power & Light Company, and Portland General Electric Company) controlling the applicant company and then distributed through their separate systems for domestic, commercial and industrial purposes.

25069

In reporting on the application, the Department of the Army has advised, among other things, that studies currently under review by the Departments of the Interior and of the Army indicate that about 500,000 acre-feet of power drawdown and flood control storage would be desirable in the Pleasant Valley Reservoir if the high Hells Canyon project is not constructed, and that in view of the importance of obtaining flood control storage in the development of the water resources of the Columbia River and tributaries, the Corps of Engineers desires further

opportunity to review this phase of the applicant's plans when more information becomes available. The Department of the Army offers no objection to the granting of a preliminary permit to the applicant.

The Chief, Forest Service, acting for the Secretary of Agriculture, who has supervison over the Wallowa, Weiser and Nez Perce National Forests, has reported favorably on the application as hereinafter provided.

An Assistant Secretary of the Interior, in reporting on the application, has pointed out, among other things, that:

(a) According to the U. S. Fish and Wildlife Service, the two proposed dams would impair passage of valuable runs of anadromous fish which spawn in the Snake River and its tributaries above the Salmon and Imnaha Rivers, and the Service estimates that the total cost of studies by Federal and State agencies needed to determine the extent of the fisheries problem and feasible means for mitigating losses would be not more than $250,000. Accordingly, the Assistant Secretary recommends that in the interest of conservation of fish and wildlife resources, any preliminary permit issued should include a provision substantially as hereinafter provided;

(b) The National Park Service believes that the impounded waters of the two dams will have definite recreational potentialities, and requests that any permit issued should include a provision substantially as hereinafter provided;

(c) The Bureau of Mines has reported that the area of the proposed project may be mineralized to a considerable extent, and recommends that any permit issued should include a provision substantially as hereinafter provided; and that

(d) Interests of other agencies of the Department of the Interior will not be adversely affected by the issuance of a preliminary permit for the proposed project.

25070

The Governor of Idaho and State of Idaho Reclamation Engineer, respectively, have reported favorably on the application. The Idaho Department of Fish and Game has reported on the application, as have the Oregon State Game Commission, the Fish Commission of Oregon, and the Department of Fisheries and the Department of Game of the State of Washington.

Federal plans for development of the two power sites as initially investigated by the Corps of Engineers and the Bureau of Reclamation indicate that the proposed project has engineering feasibility and would provide benefits from power, flood control, navigation and other interests. Since the two developments would be located immediately downstream from the Hells Canyon site, the costs, operation, and characteristics of certain features of the two dams will depend upon the ultimate development of the Snake River at and above the Hells Canyon site. Consequently, the permit should contain a condition requiring cooperative studies with the Corps of Engineers and the Bureau of Reclamation in order to determine the best plan of development.

The permit issued herein does not authorize construction of the proposed project—being for the sole purpose of maintaining priority of application for a license for the project under the terms of the Federal Power Act.

The Commission *finds:*

(1) The applicant is a corporation organized under the laws of the State of Oregon, and is qualified to do business in the States of Washington and Idaho.

(2) The project will be located on navigable waters of the United States and will occupy lands of the United States within the Wallowa, Weiser and Nez Perce National Forests.

(3) Public notice of the application has been given as required by the Federal Power Act. No conflicting application is before the Commission. However, an informal protest against the application was received from Northwest Public Power Association, Inc.

(4) The proposed project would not affect any Government dam, and no reason is apparent at this time for its development by the United States.

The Commission *orders:*

(A) This preliminary permit is issued to Pacific Northwest Power Company, of Portland, Oregon (hereinafter referred to as the Permittee), for a period of three years, effective as of April 1, 1955, for the sole purpose of maintaining priority of application

for a license for Project No. 2173 to be located upon navigable waters of the United States and affecting lands of the United States, subject to the terms and conditions of the Act, which is incorporated by reference as a part of this permit, and subject to such rules and regulations as the Commission has issued or prescribed under the provisions of the Act.

(B) This permit is also subject to the terms and conditions set forth in Form P-1, entitled "Terms and Conditions of Preliminary Permit", which terms and conditions (described as Articles 1 through 8) are attached hereto and made a part hereof; and subject to the following special conditions set forth herein as additional articles:

Article 9. The Permittee shall submit at the close of each sixth-month period from the effective date of the preliminary permit to the Commission's Regional Engineer, San Francisco, California, or to such other officer as the Commission may designate, accurate statements of the work accomplished during the period and of the work contemplated under the preliminary permit for the ensuing period.

Article 10. The Permittee shall cooperate with the U. S. Forest Service during the period of this permit to develop a plan for alleviation of damage to and achieving maximum utilization of National Forest resources insofar as affected by the proposed project.

Article 11. The Permittee shall, during the period of this permit, cooperate with the U. S. Fish and Wildlife Service, the Fish Commission of Oregon, the Oregon State Game Commission, and the Idaho Department of Fish and Game in formulating mitigation measures for inclusion in the project in the interest of fish and wildlife conservation.

Article 12. The Permittee shall, during the period of this permit, negotiate with the U. S. Fish and Wildlife Service, the Fish Commission of Oregon, the Oregon State Game Commission, and the Idaho Department of Fish and Game for the performance of the necessary studies in the interest of conservation of fish and wildlife resources and payment of the costs thereof; *Provided, however,* That in the event the Permittee and the agencies named herein fail to reach an agreement as contemplated herein, the Commission may, after notice and opportunity for hearing, determine the scope of the studies and the amount the Permittee shall pay to reimburse the agencies involved for such studies.

Article 13. The Permittee shall, during the period of this permit, cooperate with the Department of Public Lands of the State

of Idaho, the State Parks Department of the Oregon State Highway Commission, the National Park Service, and the U. S. Forest Service regarding the recreational phases of the project.

Article 14. The Permittee shall, during the period of this permit, cooperate with the Bureau of Mines in regard to a study of the mineral resource possibilities of the area affected.

Article 15. The Permittee shall, during the period of this permit, cooperate with the U. S. Corps of Engineers and the Bureau of Reclamation with the object of determining a plan of development for the two sites best adapted to a comprehensive plan of development of the water resources of the Snake River.

(C) This order shall become final thirty (30) days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313 (a) of the Act, and failure to file such an application shall constitute acceptance of this preliminary permit. In acknowledgment of the acceptance of this preliminary permit, it shall be signed for the Permittee and returned to the Commission within sixty (60) days from the date of issuance of this order.

By the Commission.

LEON M. FUQUAY
Leon M. Fuquay,
Secretary.

Adopted: April 6, 1955

Issued: April 8, 1955

(Seal)

25073

IN TESTIMONY OF ACCEPTANCE of all the provisions, terms, and conditions of this preliminary permit, Pacific Northwest Power Company, this 18th day of April, 1955, has caused its corporate name to be signed hereto by K. M. ROBINSON, its President, and its corporate seal to be affixed hereto and attested by W. E. PARROTT, its Secretary, pursuant to a resolution of its Board of Directors duly adopted on the 18th day of April, 1955, a certified copy of the record of which is attached hereto.

PACIFIC NORTHWEST POWER COMPANY

By K. M. ROBINSON
President

ATTEST:

W. E. PARROTT
Secretary

(Seal)

(Executed in quadruplicate)

25074

PACIFIC NORTHWEST POWER COMPANY

CERTIFIED COPY OF RESOLUTION

I, W. E. PARROTT, the duly elected and acting secretary of Pacific Northwest Power Company, an Oregon corporation, hereby certify that the following is a full and true copy of a certain resolution duly adopted by its Board of Directors at a special meeting held on the 18th day of April, 1955, to-wit:

> BE IT RESOLVED that the Preliminary Permit issued by the Federal Power Commission to Pacific Northwest Power Company in Project No. 2173, designated

Mountain Sheep and Pleasant Valley projects, as provided in Order of the Federal Power Commission adopted April 6, 1955, and issued April 8, 1955, for a period of three years, effective as of April 1, 1955, for the sole purpose of maintaining priority of application for License for said Project No. 2173, to be located on the Snake River in Idaho County, Idaho, and Wallowa County, Oregon, be and the same, including all of the provisions, terms and conditions of said preliminary permit, is hereby accepted, and the officers of this corporation are hereby authorized and directed to execute an aceptance in the form provided under the Rules of the Federal Power Commission and to execute any and all other instruments which may be necessary or convenient in connection therewith.

I further certify that said resolution has not been rescinded or modified and is in full force on the date of this certificate.

WITNESS my hand and the seal of Pacific Northwest Power Company this 18th day of April, 1955.

W. E. PARROTT
Secretary

(Seal)

25075

Form P-1

FEDERAL POWER COMMISSION

TERMS AND CONDITIONS OF PRELIMINARY PERMIT

Article 1. The Permittee shall make such engineering and other investigations, secure such data, and perform such acts as are necessary in order to submit to the Commission as part of its application for license such maps,

plans, specifications, estimate of cost, and other information for a full understanding of the proposed project as is required by the Commission's rules and regulations; and shall supply for the use of the Commission copies of engineering and geologic reports and results of tests and analyses, and any other information secured in connection with such investigations, examinations, and surveys when and as they are submitted to or completed by the Permittee. In carrying out the requirements of this article the Permittee shall:

A. Install as soon as practicable and thereafter maintain such stream gages and stream-gaging stations as the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region shall determine necessary and best adapted for the purpose of determining the stage and flow of the stream or streams from which water will be diverted, and shall provide for required readings of such gages and for the adequate rating of such stream-gaging stations. The exact location, design, and time of installation of gages and stations, the ratings of such stations, and the determination of the flow thereat shall be made under the supervision of or in cooperation with

the District Engineer of the Geological Survey having charge of stream-gaging operation in the region of said project; and the Permittee shall advance the said Geological Survey the amount of funds estimated to be necessary for such cooperation and supervision for such periods as may be mutually agreed upon. The Permittee shall keep accurate and sufficient record of the foregoing determinations to the satisfaction of the Commission, shall make return of such records at the

time of filing application for license and at such other times as the Commission may require, and in such form as the Commission may prescribe.

B. Sink such test pits or make such borings or other foundation explorations and make such geologic studies and tests on foundations and fill material as will make available sufficient information relating to character of foundations and materials for the project structures to permit of the designing of the structures in accordance with good engineering practice and the checking of their safety, adequacy, and desirability in the development of the resources involved.

C. Begin the required investigations within sixty days after acceptance of the permit, and thereafter prosecute such investigations in such manner and at such rate as in the judgment of the Commission will insure the completion of all necessary investigations within the period of the permit.

25077

Article 2. A license will be issued for the proposed roject only if in the judgment of the Commission said roject will be best adapted to a comprehensive plan for ie improvement and utilization of the site for purposes f navigation, of water-power development, and for other eneficial public uses, including recreational purposes. In aching a decision thereon, the Commission will consider, nong other things:

A. Whether the maps, plans, and specifications are such:

(1) That full, practicable utilization will be made of the water, storage possibilities, and the head at the site to be developed;

(2) That the structure will be safe and in accordance with good engineering practice; and

(3) That all unnecessary energy losses, whether in hydraulic works or in mechanical or electrical equipment, will be avoided.

B. Whether in relation to existing or probable future projects upon the same or adjacent streams, the fullest practicable utilization of the water, storage possibilities, and head available will be made possible.

C. Whether said project will be in general accord with the most beneficial utilization of the water for navigation, water power, irrigation, or other beneficial public uses, and for aiding flood control, reclamation, and similar developments.

D. Whether proper provision is made for present or future electrical interconnection with other projects or systems in order to take advantage of diversity of stream-flow and of power demands.

E. Whether the use to which the power will be devoted is, in general, in accord with the needs of the community and of the public welfare.

F. Whether the applicant is financially able to carry out the development.

G. Whether the construction, maintenance, and operation of the proposed project works will interfere or be inconsistent with the purpose for which any reservation of lands of the United States was created or acquired.

Article 3. The priority granted under the permit will be lost if the Permittee fails to fulfill the requirements of the

permit, if the permit is canceled by order of the Commission, or if in course of consideration by the Commission of said application for license, the Permittee shall not on or before the date of expiration of the permit, or such later date as may be fixed by the Commission:

A. File data required by the Commission in addition to that contained in or furnished with said application; or

B. Present satisfactory evidence of ability to carry out the plan as set forth in said application, or as required to be modified by the Commission; or

C. Accept the conditions of the proposed license; or

D. Modify the plans as may be required by the Commission if the project adopted as disclosed in said plans is not such as in the judgment of the Commission, based upon the consideration set forth in Article 2 hereof, will be best adapted to a comprehensive plan for the improvement and utilization of the site for the purposes of navigation, of water-power development, and for other beneficial public uses, including recreational purposes.

Article 4. The Permittee shall keep accurate and dependble records of all expenditures made for the purposes uthorized by the permit, together with all vouchers and her supporting data relating to such expenditures, which ecords shall be retained by the Permittee.

Article 5. If license is issued for said proposed project shall be subject to the pertinent provisions of the Act, the rules and regulations of the Commission in effect at e time of issuance, and may contain such special condi-

tions and requirements not inconsistent with the Act as the Commission may require.

Article 6. The permit confers no authority upon the Permittee to undertake construction of the project, or any part thereof, or to occupy or use lands or other property of the United States for the purposes of construction unless specific permission is given by the Commission for

such occupancy or use; and neither the granting or such authority nor the performance of construction work whether with or without such authority shall be deemed to have created any equities or to have established any rights with respect to issuance of license, beyond what would have been created or established had such authority not been given or such work not been performed.

Article 7. In order to maintain the priority of application granted by the permit, the Permittee shall on or before the expiration date of the permit file with the Commission or its designated agent, in conformity with the Commission's rules and regulations then in effect, an application for license for the proposed project.

Article 8. The permit is not transferable and may be canceled by order of the Commission upon failure of the Permittee in good faith to begin or diligently to prosecute the investigations, examinations, and surveys contemplated under the permit, or to comply with any other conditions therein, or for any other good cause shown after notice and opportunity for hearing.

25081

Project No. 2243

BEFORE

FEDERAL POWER COMMISSION

Application for License

FOR

MIDDLE SNAKE RIVER HYDRO-ELECTRIC PROJECT ON THE MIDDLE SNAKE RIVER IN THE STATES OF IDAHO AND OREGON

BY

PACIFIC NORTHWEST POWER COMPANY

MARCH 1958

25083

BEFORE THE

FEDERAL POWER COMMISSION

APPLICATION FOR LICENSE FOR THE MIDDLE SNAKE RIVER PROJECT IN THE MIDDLE SNAKE RIVER IN THE STATES OF IDAHO AND OREGON, BY PACIFIC NORTHWEST POWER COMPANY

APPLICATION FOR LICENSE

Project No. 2243

1. Pacific Northwest Power Company, a corporation organized under the laws of the State of Oregon and having its office and principal place of business at Portland, in the State of Oregon, and also at Spokane, in the State of Washington, referred to sometimes herein as the "applicant", hereby makes application to the Federal Power Commis-

sion for a license, under the Federal Power Act, to authorize the construction, operation and maintenance of the Middle Snake River Project, comprising such project works as shall be, in the judgment of the Commission, best adapted to a comprehensive development of that portion of the Columbia River System beginning at a point approximately at the confluence of the Salmon and Snake Rivers in the States of Oregon and Idaho and extending upstream thereof, said reach being sometimes designated herein as the "Middle Snake River". Applicant has received from the Federal Power Commission Preliminary Permit to investigate the development of said Middle Snake River, issued April 8, 1955 and designated as Project No. 2173, and this Application is made pursuant to paragraph (A) of said Preliminary Permit and of Sections 4(f) and 5 of the Federal Power Act.

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6. The applicant proposes to construct a project best adapted to the comprehensive development of the Middle Snake River. A structure comprising an arch dam approximately 670 feet in height and with a normal pool elevation 1490 feet mean sea level could be located on the Snake River above the mouth of the Salmon River. Eventually, when and if development of fish passage makes construction feasible, a structure could be located just above the mouth and developing the head of the Salmon River to elevation 1575 feet mean sea level. This combination would provide 5,700,000 acre feet of maximum useable storage and 2,565,000 kilowatts of ultimate capability. This is greater flood control storage and greater power than, on present information, would be provided by any other single project or combination of projects developing the same resources, and therefore meets criteria applied by the Commission in this.

25086

proceeding. Accordingly, applicant includes in this Application necessary design drawings and topographical and other information concerning the structure on the Snake River known as "High Mountain Sheep Development". Applicant proposes to prepare and present to the Commission appropriate information on alternative developments of the same resources involved herein, including an examination of the relative costs and benefits of such developments, so that the Commission may determine what project or combination of projects is, in view of all costs and benefits derived therefrom, best adapted to a comprehensive development of the resources involved. However, applicant does not include and does not propose to include in its Application for License the development on the Salmon River, known as the Lower Canyon Development, as part of its Middle Snake River Project.

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7. The High Mountain Sheep Hydroelectric Development will include a dam across the Snake River in the State of Idaho, Section 14, Township 29 North, Range 4 West, B.M.; and in the State of Oregon, Section 11, Township 4 North, Range 48 East, W.M.; of a height sufficient to provide a top reservoir elevation above sea level of approximately 1490, without surcharge, at the dam, with a maximum net head of 575 feet with seven units operating at full gate opening. The initial installed generating capacity of seven (7) units has been tentatively established at 1,155,000 kw at 0.95 pf (1,330,000 kw maximum capability using 35,000 cfs), and an ultimate generating capacity, with eight (8) units, of 1,320,000 kw at 0.95 pf (1,520,000 kw maximum capability using 40,000 cfs).

(a) *Dam and Reservoir*—Variable radius, variable thickness, concrete arch type dam with side hill over-

flow spillway section with two powerhouses (one on each side) immediately downstream of the dam. The maximum height of the dam will be approximately 690 feet with its top elevation at elevation 1500. The spillway section of the dam will consist of a side hill gated overflow section having four tainter gates on its crest. The spillway crest of the gated section will be at elevation 1450. The gates will be 50 feet wide by 40 feet high. The entire spillway and powerhouse (assuming six units of seven initial units are operable and utilizing 30,000 cfs) will be capable of discharging a flood of 300,000 cfs with pond at elevation 1495. The reservoir will extend 58.1 miles upstream from the dam to the tailwater of the Hells Canyon Hydroelectric site. The

normal surface area of the pond will be approximately 16,300 acres with an estimated total capacity of 3,250,000 acre-feet, of which a maximum of 2,700,000 acre-feet would be usable, and approximately 1,570,000 acre-feet would be usable with 120 foot drawdown. Seven 8′6″ conduits will be provided through the dam and installation made of ring-follower and hollow jet valves, or other suitable equipment, for flood control facilities.

(b) *Water Conduits*—A separate penstock will be provided for each of the units. The initial installation will include seven penstocks; the eighth will be partially installed at the time of original construction. The water from the powerhouse will be discharged directly into the main channel of the Snake River. Construction diversion tunnel will be provided through the left abutment, and will later be closed with concrete plug.

(c) *Powerhouses, Substation and Switchyard*—Two powerhouses are to be located immediately downstream of the dam abutments, one on each side of the river; tentatively four units to be on the Oregon side and three units on the Idaho side initially. Provision is to be made for the ultimate installation of a fourth unit on the Idaho side. Francis type turbines and outdoor generators will be utilized. Two outdoor gantry cranes, each having a capacity of approximately 700 tons, will be provided for assembling and disassembling of

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units. Main power transformers will be located on the powerhouse roofs, downstream of the units. Switchyard will be located at elevation 1720 in an area adjacent to the left abutment of the dam.

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10. The proposed scheme of development of the Middle Snake Project is as follows:

The powerhouses of the High Mountain Sheep Development are to be reinforced concrete structures located on each side of the river immediately downstream of the concrete arch dam. Provision is to be made for the initial installation of four units on the left bank and three units on the right bank with provisions for the future addition of a fourth unit on the right bank. Each unit is rated at 270,000 hp (full gate opening) under a maximum net head of 540 feet.

The High Mountain Sheep Development is about .8 of a mile above the mouth of the Salmon River and will back water up to the tailwater of the Hells Canyon Hydro-Electric site. The project will thus develop the full fall of the

Middle Snake River from the Hells Canyon site to the Middle Snake site. The Middle Snake Project provides for maximum effective operation and use of the potential water resources, all of which is in the best public interest.

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13. The following exhibits are submitted herewith, will be submitted later, or are incorporated by reference to the Application for Preliminary Permit ("PP") or the Application for License ("Lic") filed heretofore, all as noted below.

Exhibit A-1	Articles of Incorporation	"PP" Exhibit A-(b)
Exhibit A-2	By-laws, as amended to date	Filed herewith
Exhibit A-3	Certificate of Organization	Filed herewith
Exhibit A-4	Certificate of Good Standing—Oregon	Filed herewith
Exhibit A-5	Certificate of Good Standing—Idaho	Filed herewith
Exhibit A-6	Certificate of Good Standing—Washington	Filed herewith

25092

Exhibit A-7	Certificate of Good Standing—Montana	Filed herewith
Exhibit B	Certified copy of Resolution of Board of Directors authorizing filing of Application	Filed herewith
Exhibit C	Special laws applicable to project	"Lic" Exhibit C
Exhibit D	Compliance with Requirements of State Laws	To be supplied later
Exhibit E	Water Rights	"Lic" Exhibit E, together with additional material filed herewith
Exhibit F	Statement Pertaining to Project Lands	"Lic" Exhibit F, together with additional material to be supplied later

Exhibit G	Financial Statement	"Lic" Exhibit G
Exhibit H	Stream Flow Utilization	To be supplied later
Exhibit I	Loads and Resources and Related Operational Characteristics	To be supplied later
Exhibit J	General Map of Project Area	Filed herewith
Exhibit K	Detailed Map of Project Area Sheets 1 to 87	"Lic" Exhibit K, with project boundary modified
	Sheets A-1 through A-19	Filed herewith
Exhibit L	General Design Drawings Sheets 1 through 29	"Lic" Exhibit L
	Sheets 30 through 38	Filed herewith
Exhibit M	General Description and Specifications of Equipment	Filed herewith
Exhibit N	Estimate of Cost	To be supplied later
Exhibit O	Construction Schedule	Filed herewith

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FEDERAL POWER COMMISSION

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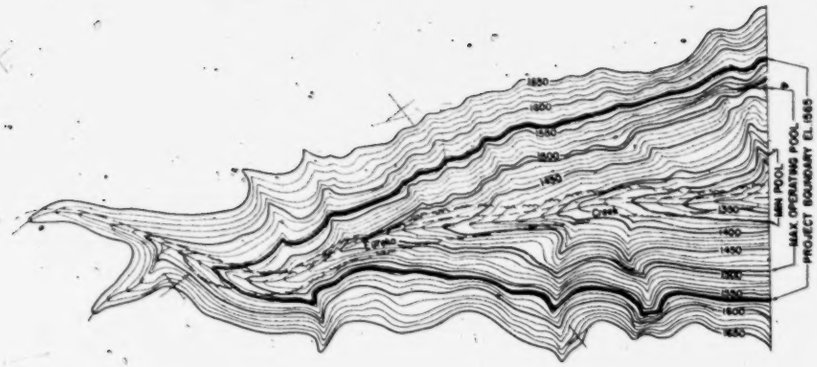


EXHIBIT K
SHEET A-1

200 0 200 400 600 800 1000

Index to Sheets

Preliminary Reconnaissance Series

I certify that I supervised the survey of the project lands; that it is correct and accurate and is correctly shown on this map.

March 10, 1958

Ernest W. Pehr Jr.

Ernest W. Pehr Jr. was employed by the applicant to make the survey referred to above.

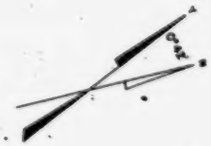
Scale 1"=200'

Contour Interval - 10'

U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.



PROJECT Nº2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE : 1"= 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

G-158907

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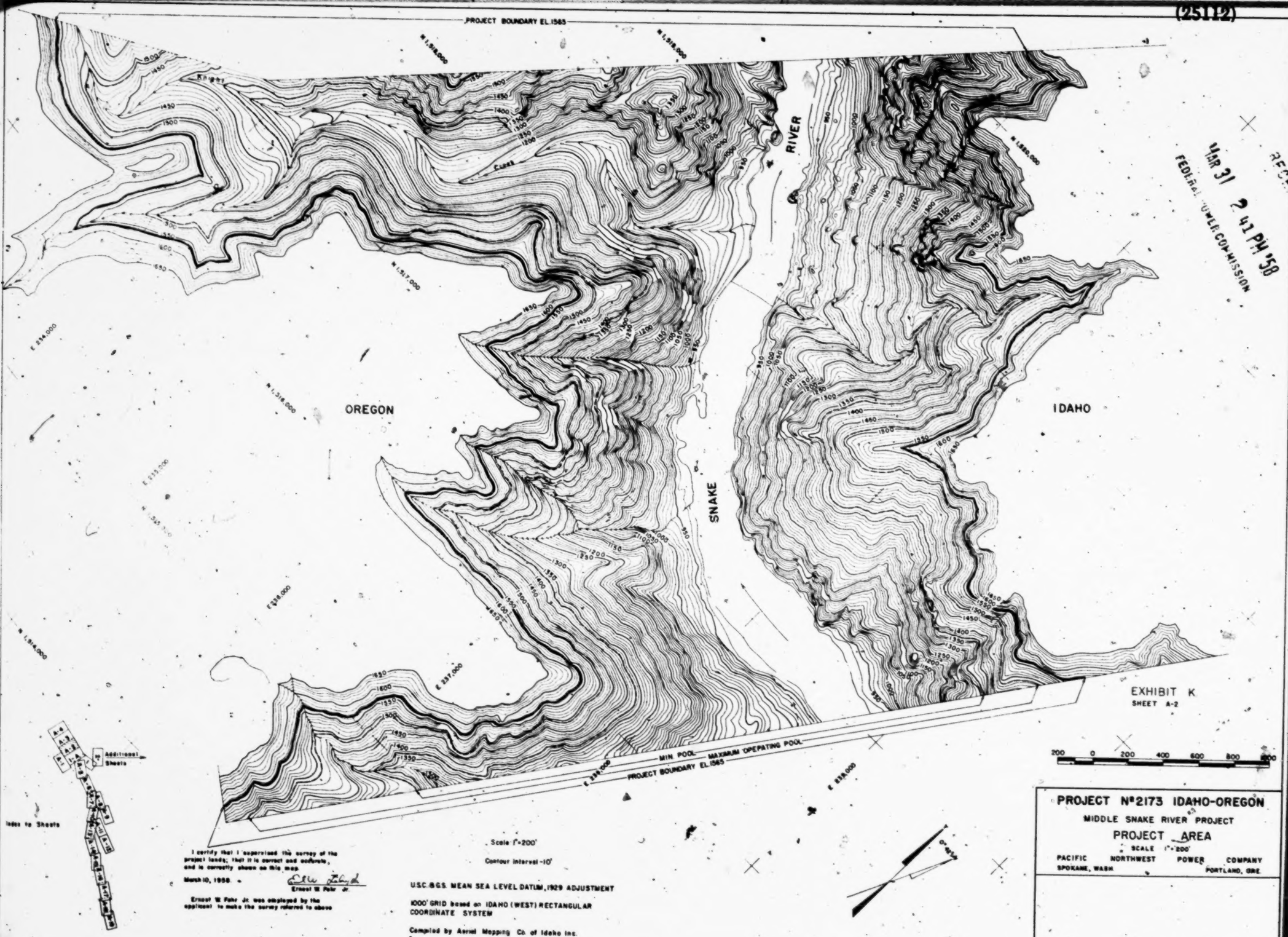

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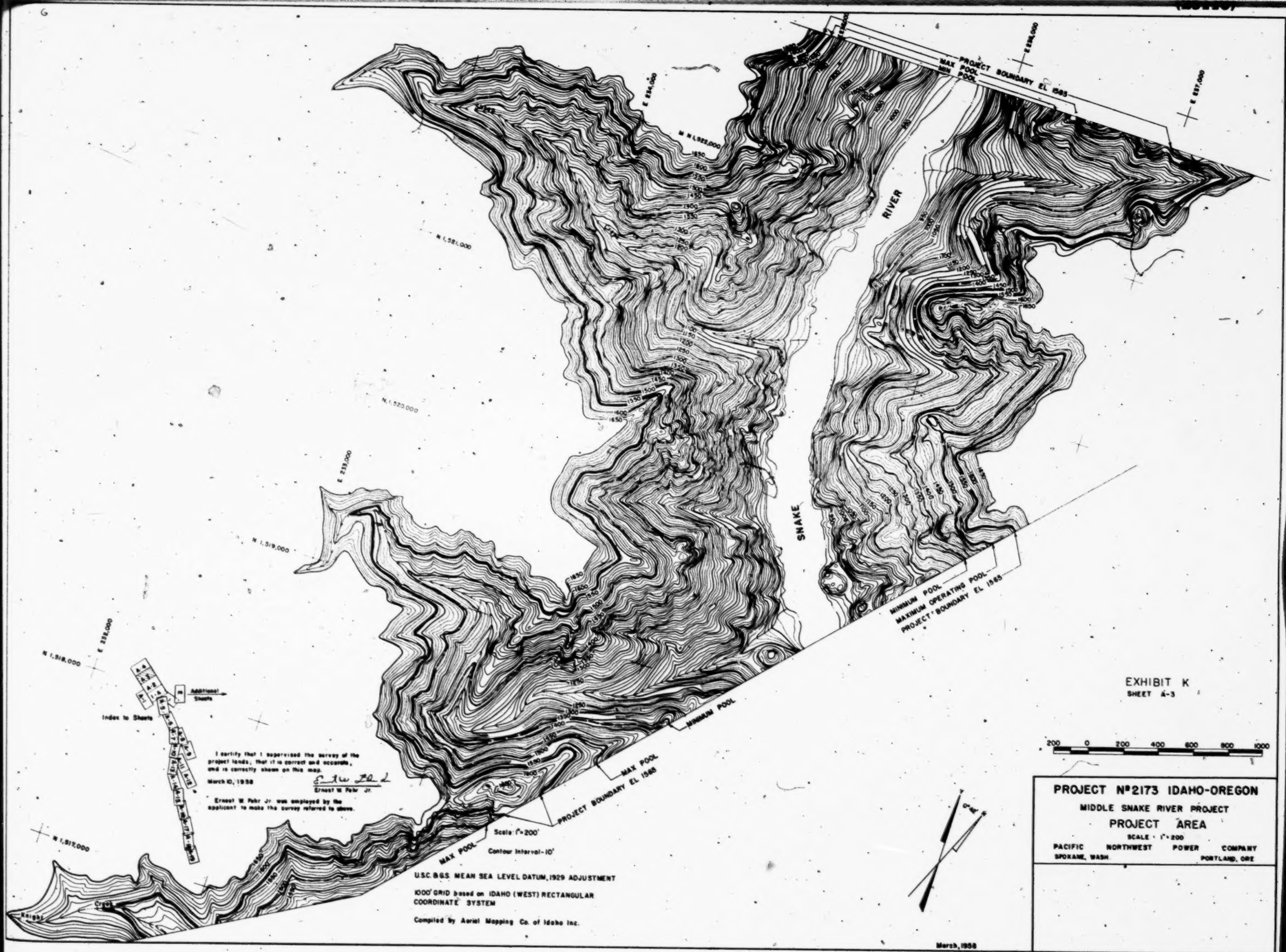
FEDERAL POWER COMMISSION

PROJECT Nº2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE 1"=200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

G-158906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MAX POOL
RIVER
SNAKE
MINIMUM POOL
MAXIMUM OPERATING POOL
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Index to Sheets
Additional Sheets
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March 10, 1958
Ernest W. Fehr Jr.
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Scale: 1"=200'
Contour Interval-10'
U.S.C.&G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT
1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM
Compiled by Aerial Mapping Co. of Idaho Inc.
EXHIBIT K
SHEET A-3
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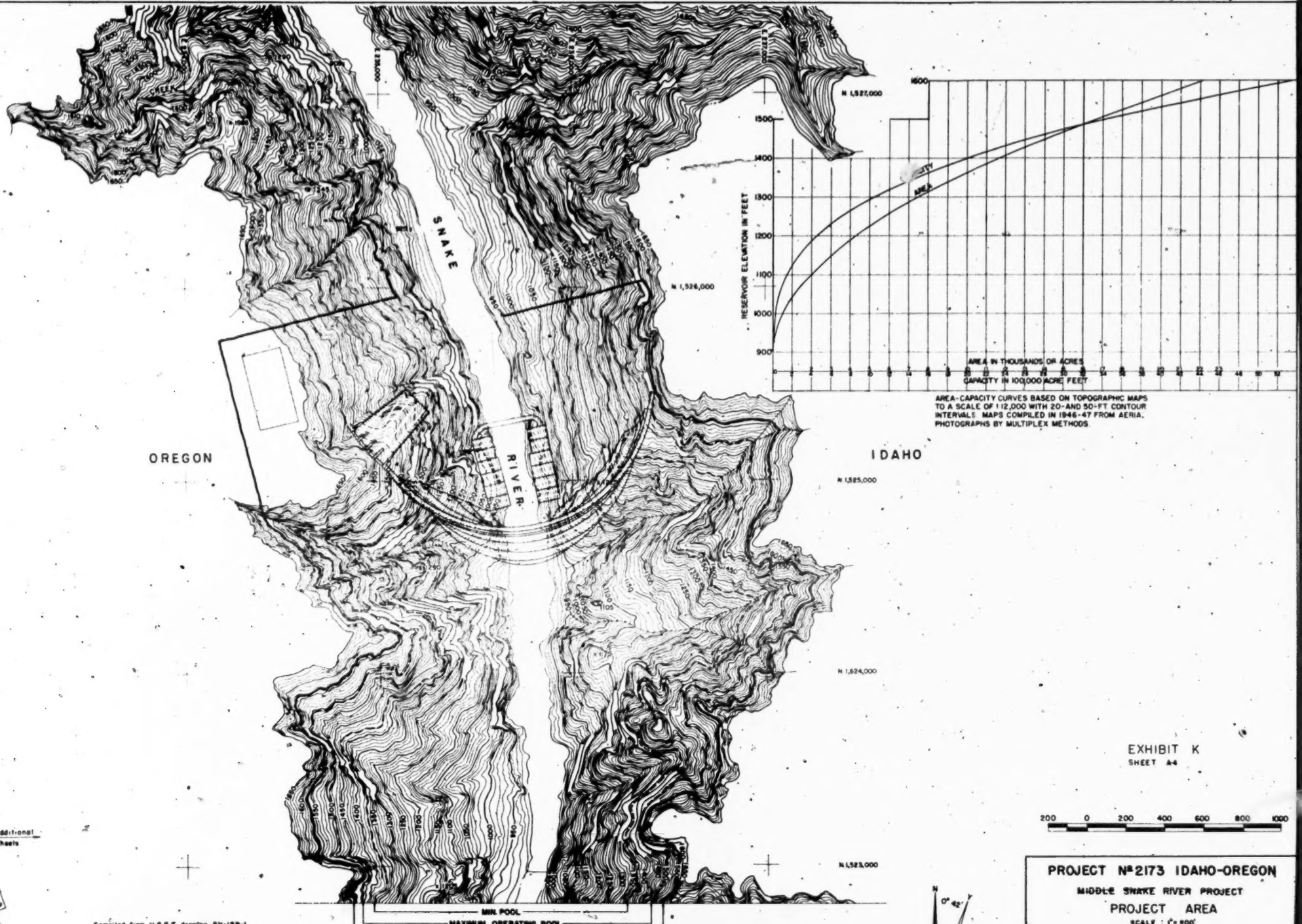
PROJECT Nº2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE 1"=200
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE
March, 1958



AREA-CAPACITY CURVES BASED ON TOPOGRAPHIC MAPS TO A SCALE OF 1:2,000 WITH 20- AND 50-FT. CONTOUR INTERVALS. MAPS COMPILED IN 1946-47 FROM AERIAL PHOTOGRAPHS BY MULTIPLEX METHODS.

EXHIBIT K
SHEET A4

Additional Sheets

Compiled from U.S.C.E. drawing SN-189-1

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March 10, 1958

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USC&GS MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.

March, 1958

PROJECT Nº 2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE : 1" = 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

G-15890

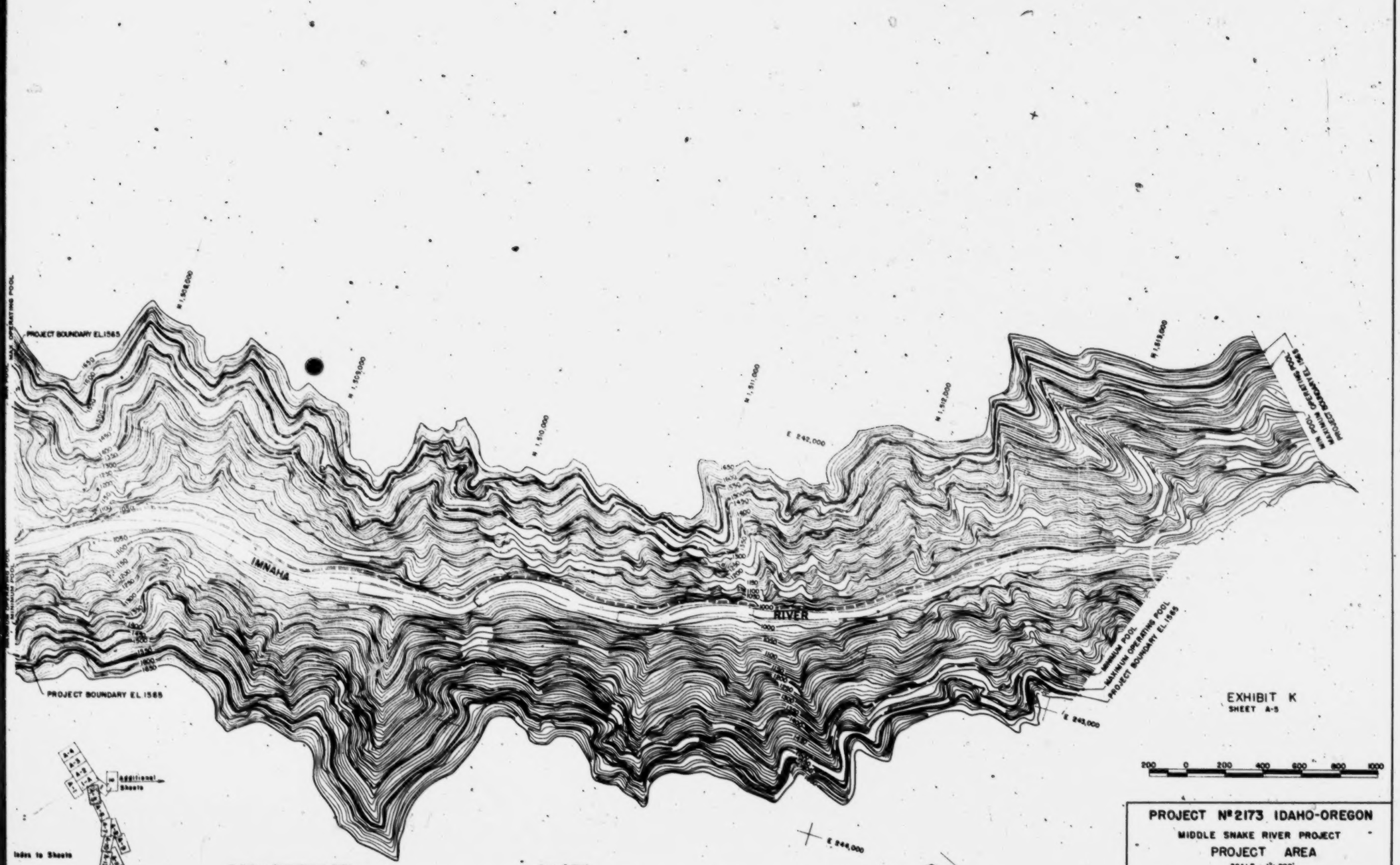

EXHIBIT K
SHEET A-5

200 0 200 400 600 800 1000

Preliminary Reconnaissance Series

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March 10, 1958

Ernest W. Pohr Jr.

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Scale 1"=200'

Contour interval-10'

U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000 GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.

PROJECT Nº 2173 IDAHO-OREGON

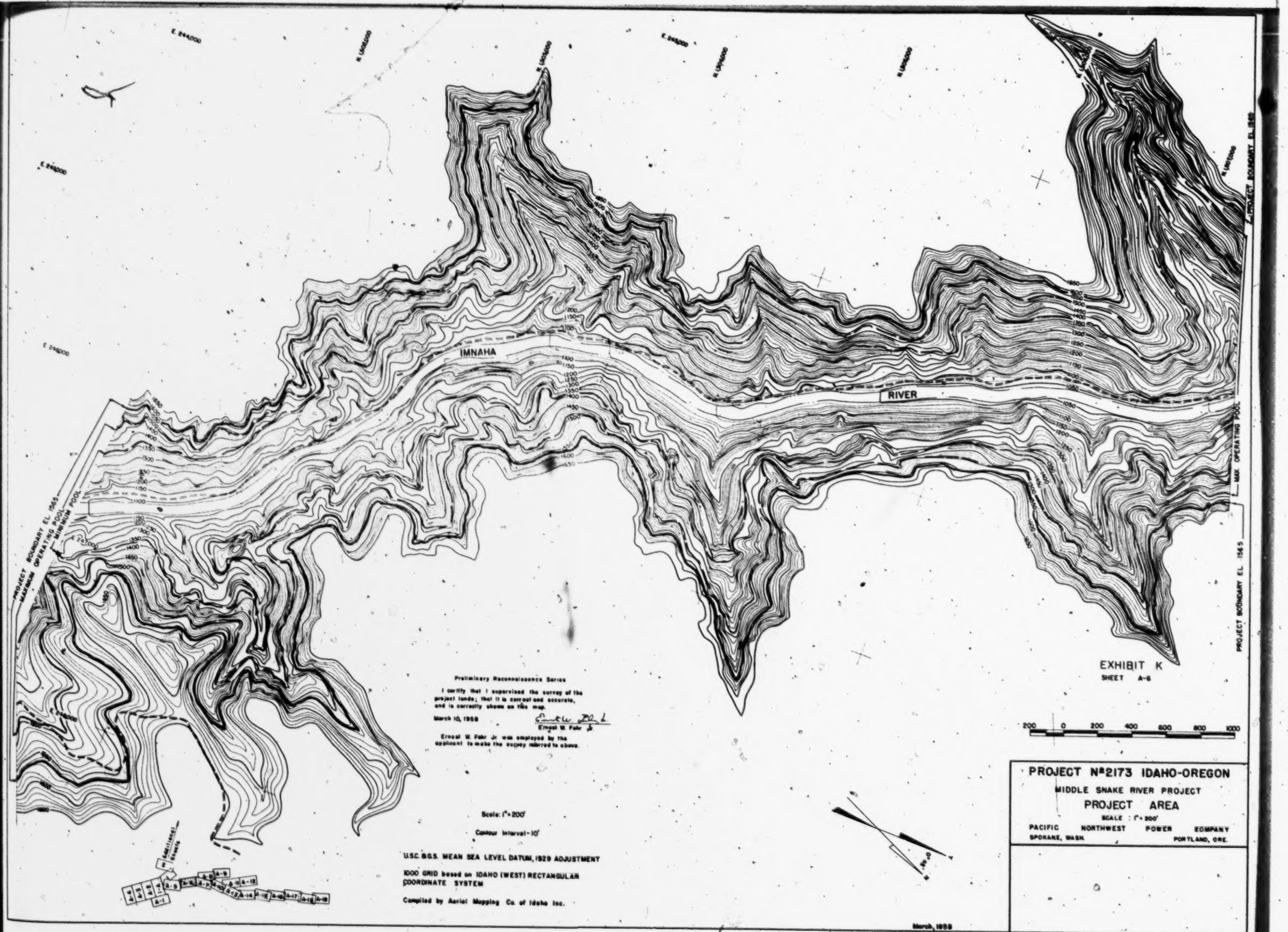
MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE 1"= 800'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.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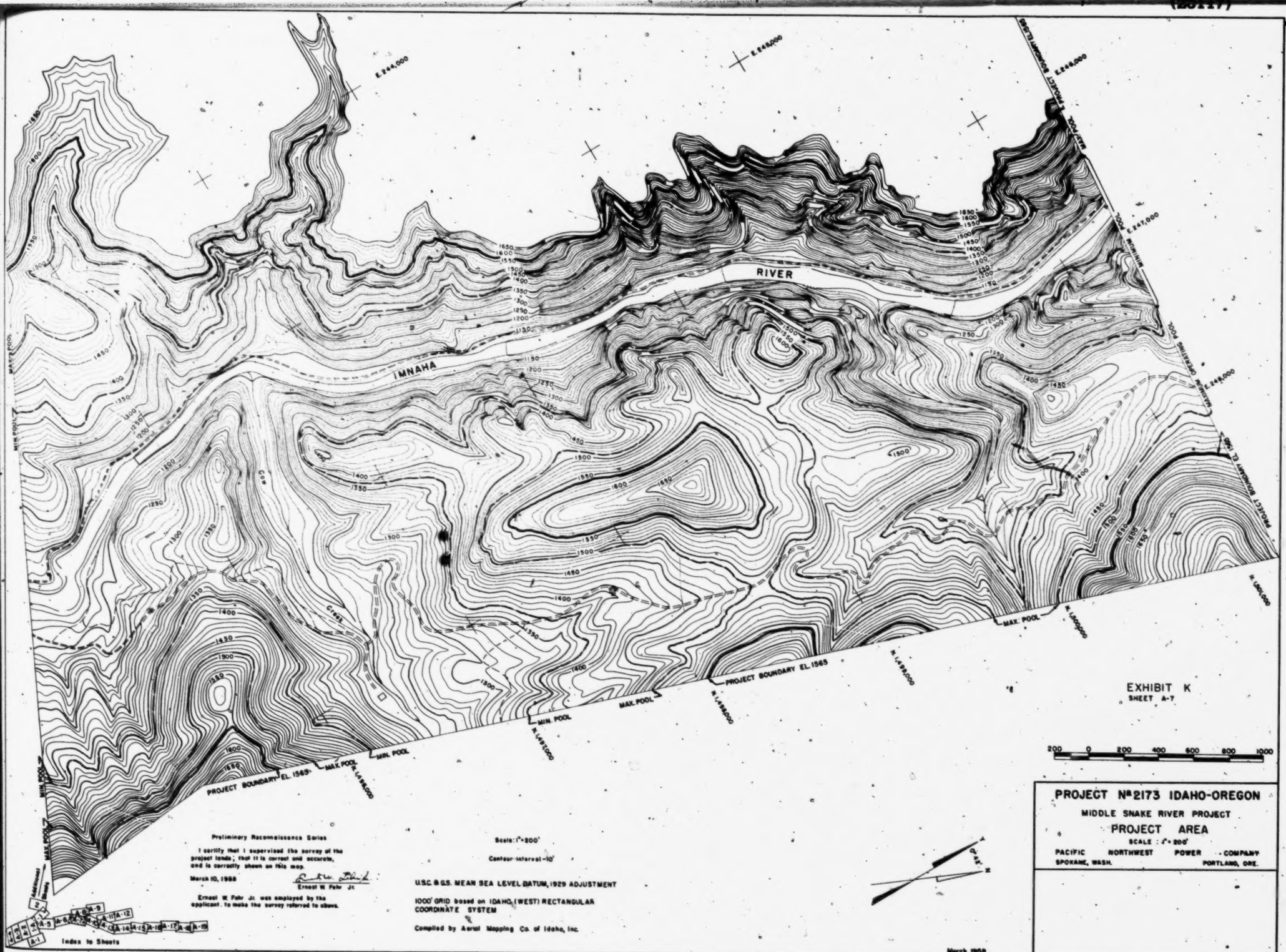
Compiled by Aerial Mapping Co. of Idaho Inc.
March, 1958
PROJECT Nº2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE : 1"= 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.


RIVER
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PROJECT BOUNDARY
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PROJECT Nº 2173 IDAHO-OREGON
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SCALE : 1" = 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.
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Compiled by Aerial Mapping Co. of Idaho, Inc.
March, 1958
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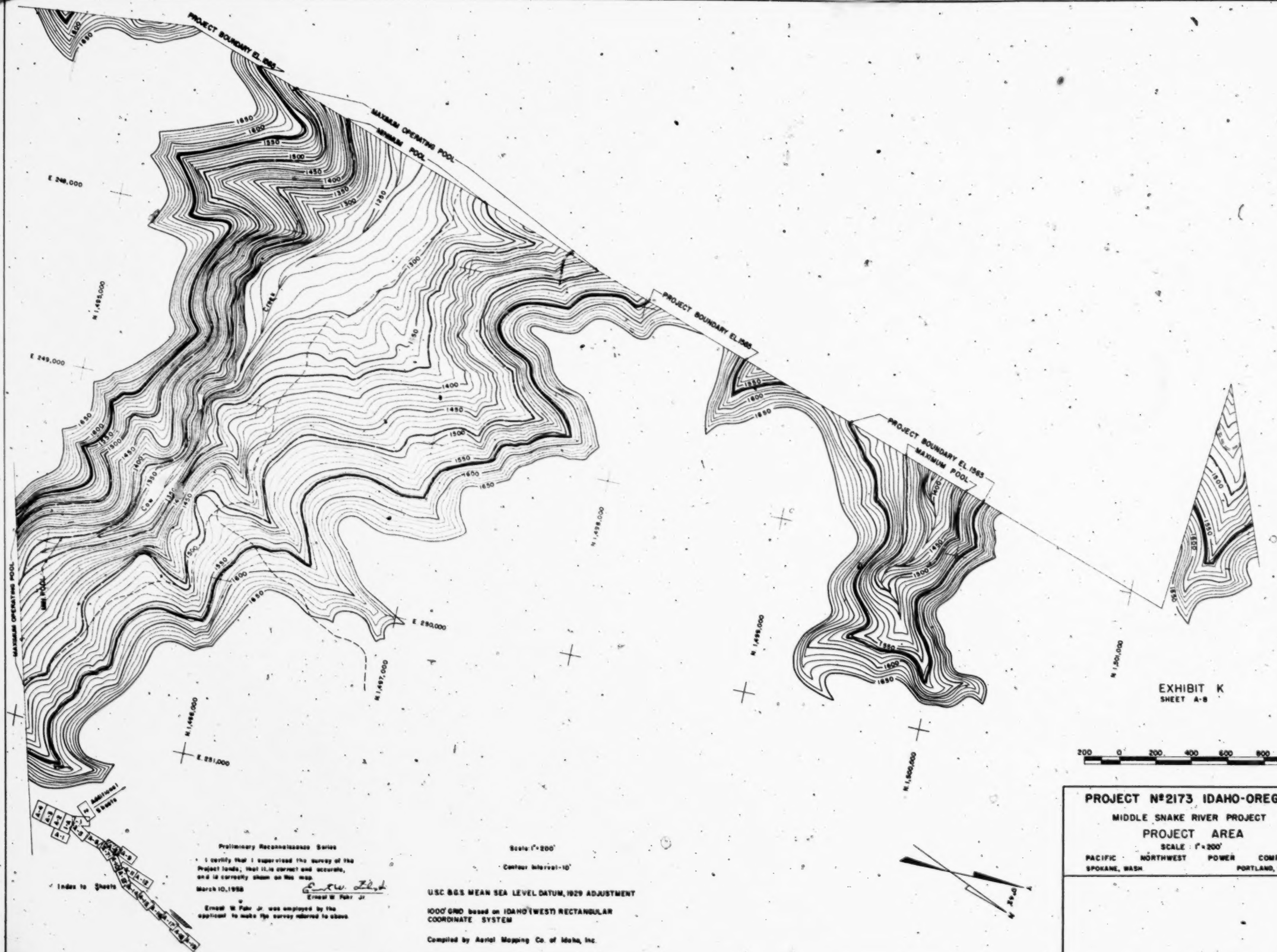
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Additional Sheets
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USC & GS MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT
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PROJECT Nº2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE: 1" = 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH PORTLAND, ORE.

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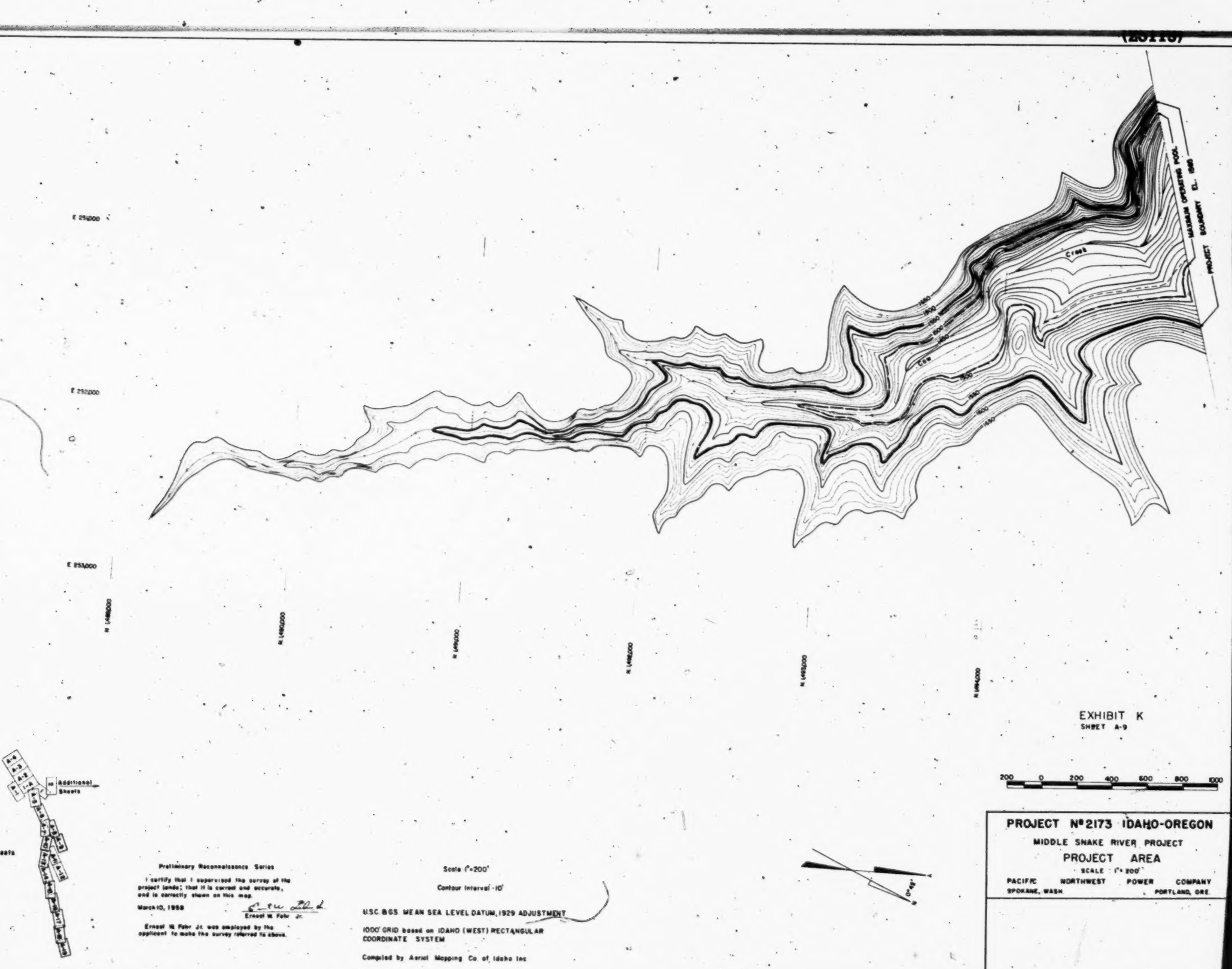

EXHIBIT K
SHEET A-9

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PROJECT Nº 2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

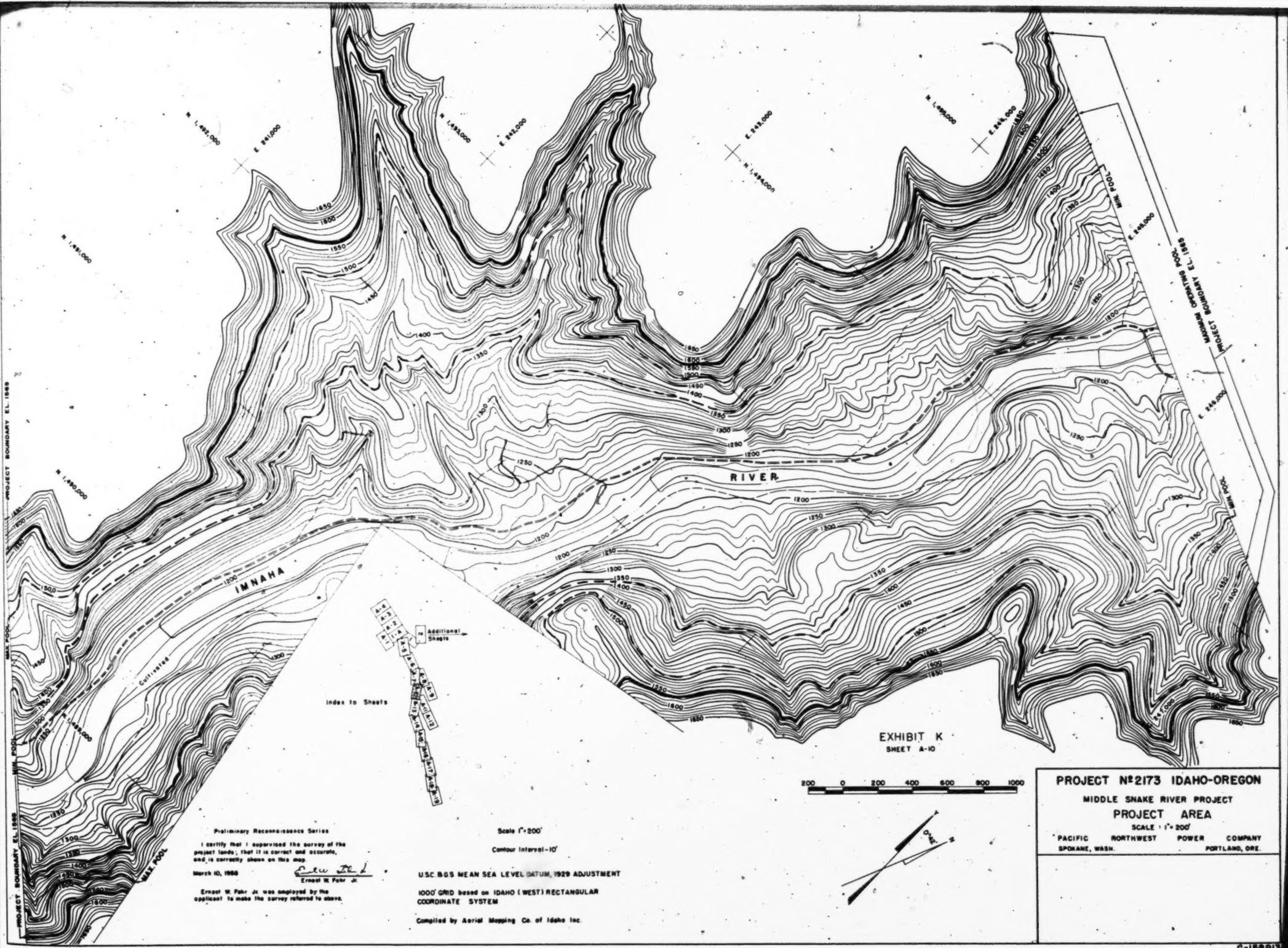
PROJECT AREA

SCALE 1" = 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

G-1589


RIVER
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PROJECT BOUNDARY EL. 1565
MAX POOL
MIN POOL
MAXIMUM OPERATING POOL
PROJECT BOUNDARY EL. 1565
Cultivated
Index to Sheets
79 Additional Sheets
EXHIBIT K
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MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE : 1" = 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

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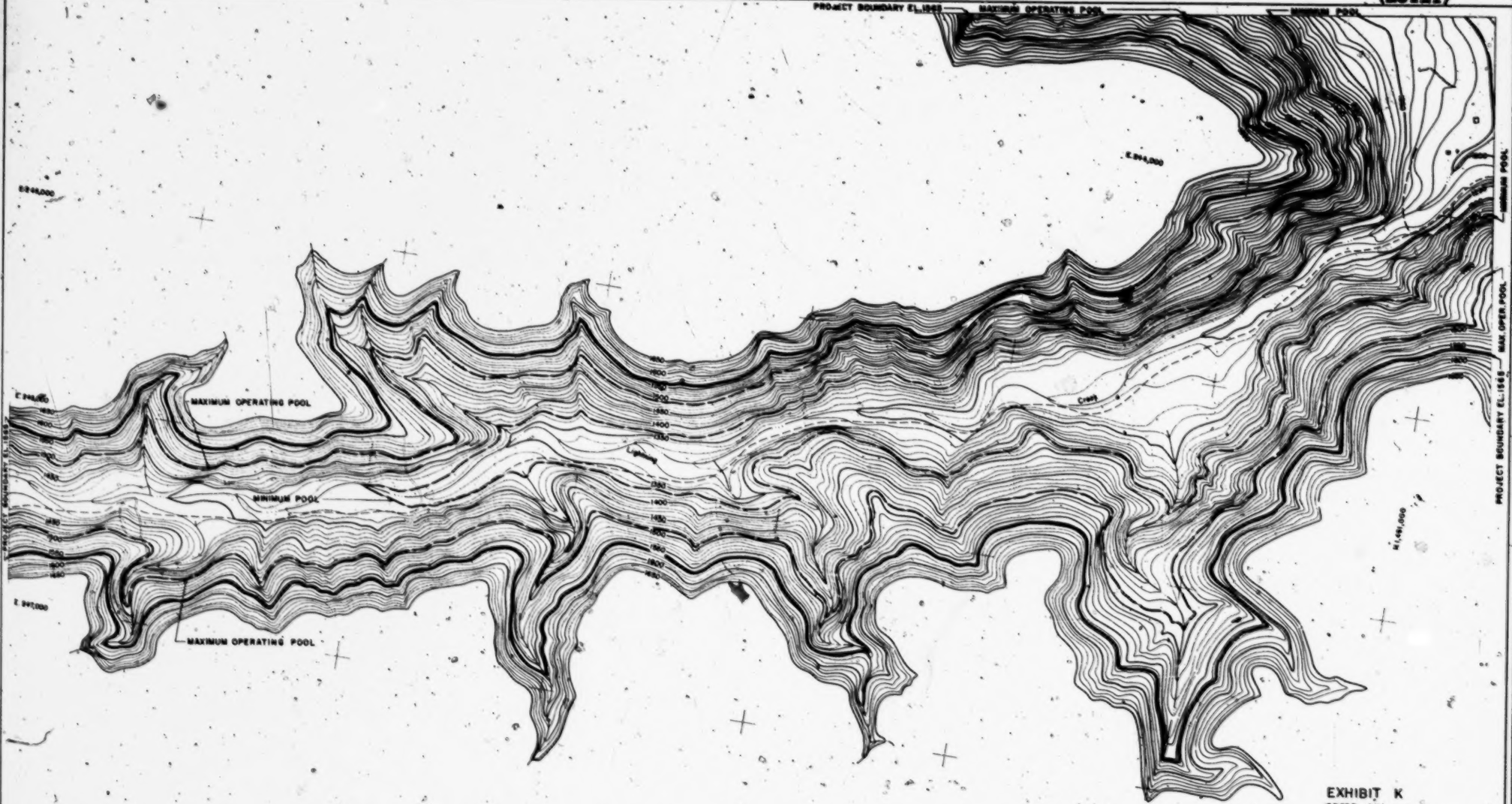
(25121)



6-159255

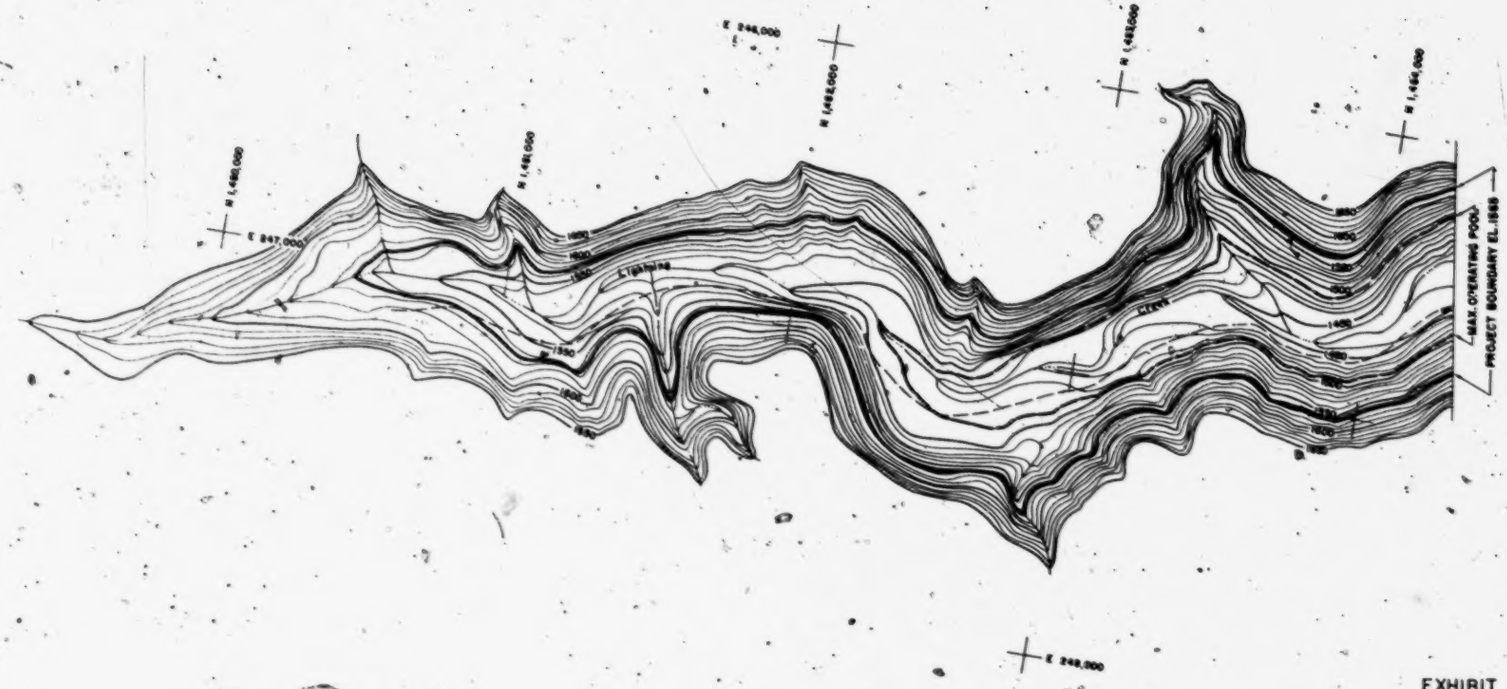


EXHIBIT K-
SHEET A-12

Preliminary Reconnaissance Series

I certify that I supervised the survey of the project lands; that it is correct and accurate, and is correctly shown on this map.

March 10, 1958

Ernest W. Pohr Jr.

Ernest W. Pohr Jr. was employed by the applicant to make the survey returned to above.

Scale: 1"=200'

Contour interval=10'

U.S.C.& G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.
Photography, Flown April-May, 1955

200 0 200 400 600 800 1000

PROJECT Nº2173 IDAHO-OREGON

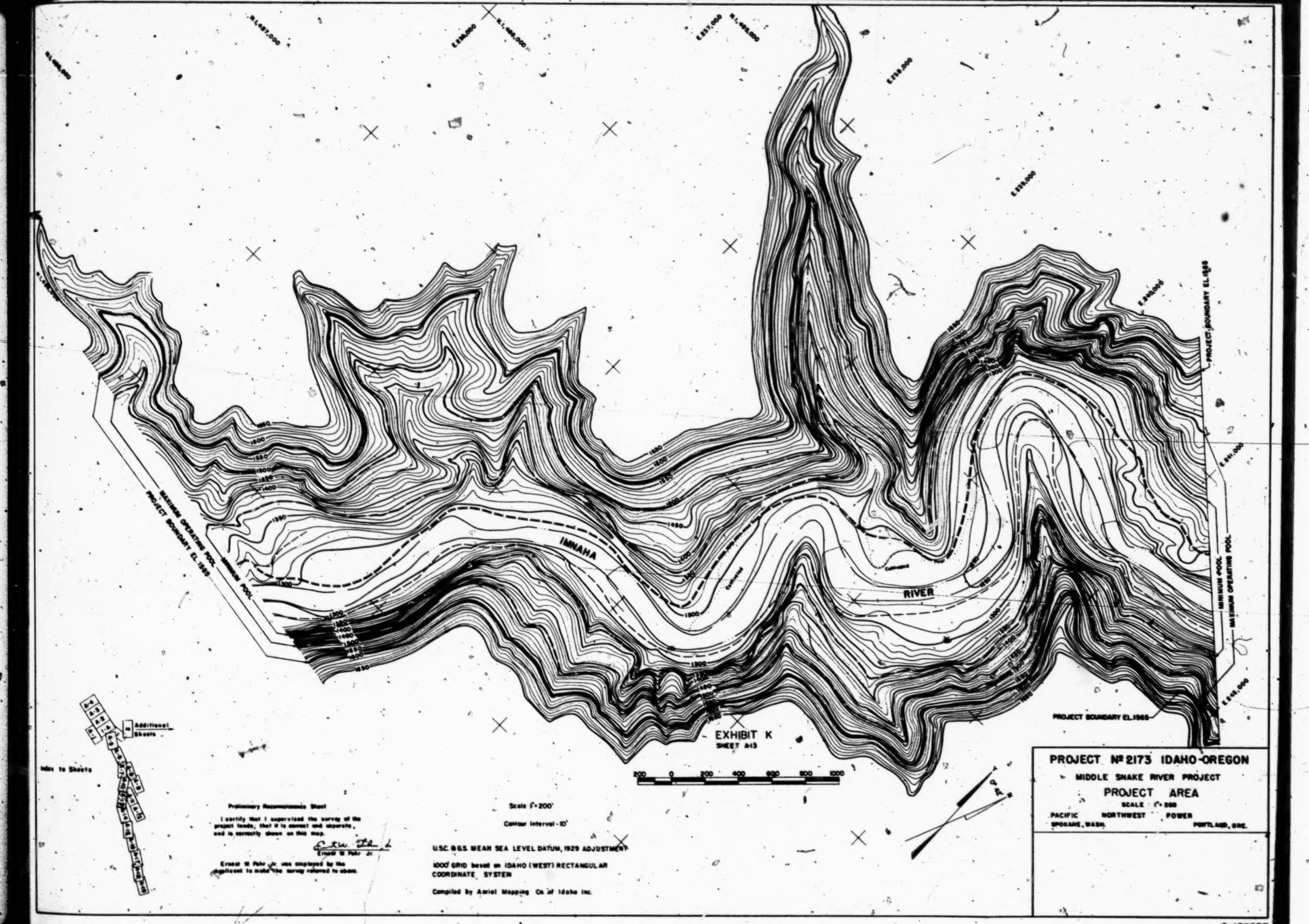
MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

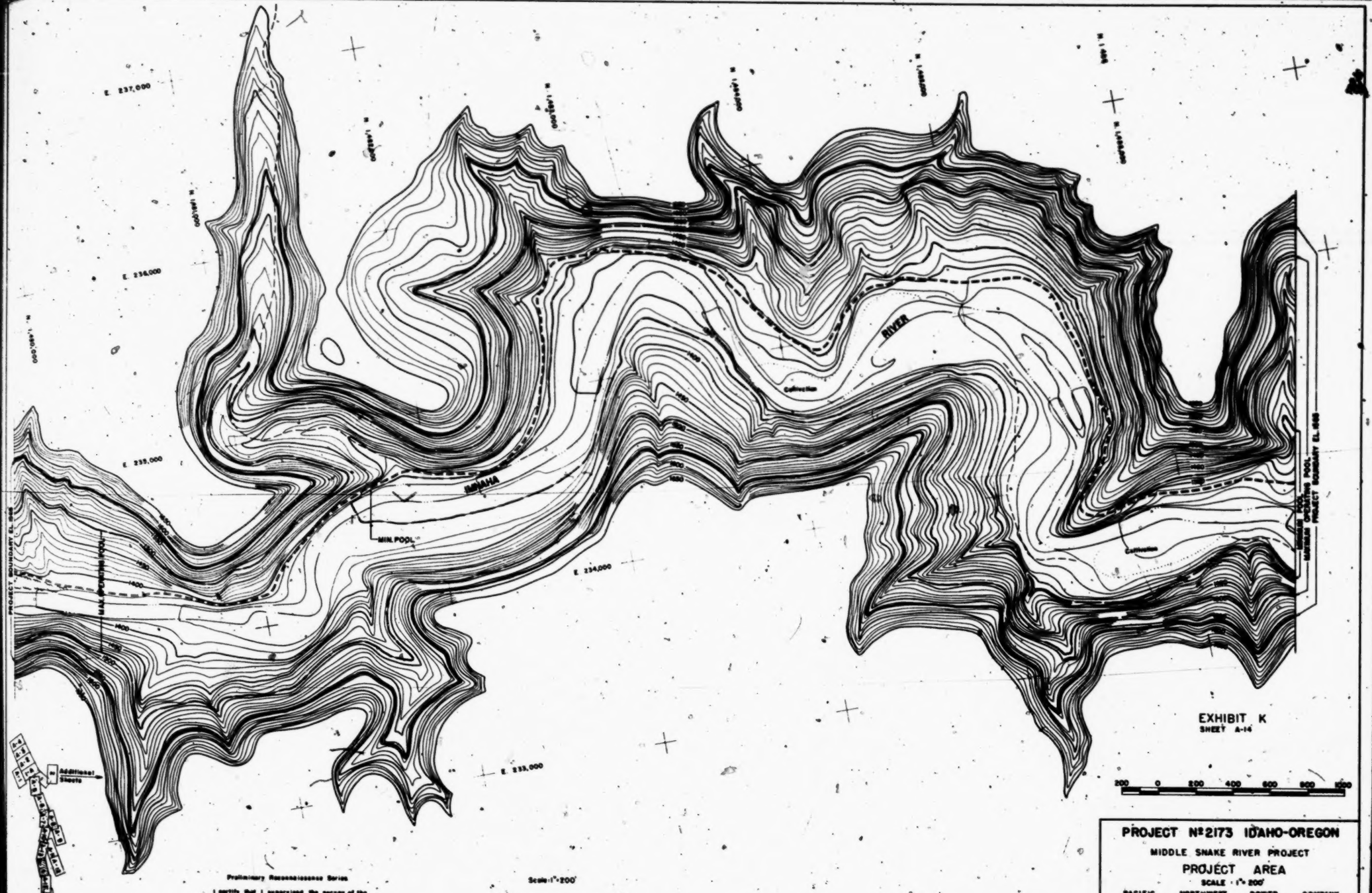
SCALE 1"=200'

PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH PORTLAND, ORE.

G-159256


IMNAHA
RIVER
PROJECT BOUNDARY EL. 1965
MAXIMUM OPERATING POOL
MINIMUM POOL
EXHIBIT K
SHEET #13
Index to Sheets
Additional Sheets
Preliminary Reconnaissance Sheet
I certify that I supervised the survey of the project lands, that it is correct and accurate, and is correctly shown on this map.
Ernest W. Pehr Jr.
Ernest W. Pehr Jr. was employed by the applicant to make the survey referred to above.
Scale 1"=200'
Contour interval - 10'
U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT
1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM
Compiled by Aerial Mapping Co. of Idaho Inc.
PROJECT Nº 2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE 1"= 200
PACIFIC NORTHWEST POWER
SPOKANE, WASH. PORTLAND, ORE.

G-159257



Preliminary Reconnaissance Series

I certify that I supervised the survey of the project lands; that it is correct and accurate, and is correctly shown on this map.

March 10, 1958

Ernest W. Pohr Jr.

Ernest W. Pohr Jr. was employed by the applicant to make the survey referred to above.

Scale 1" = 200'

Contour Interval - 10'

U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.

PROJECT Nº 2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE - 1" = 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

G-159298

(25125)

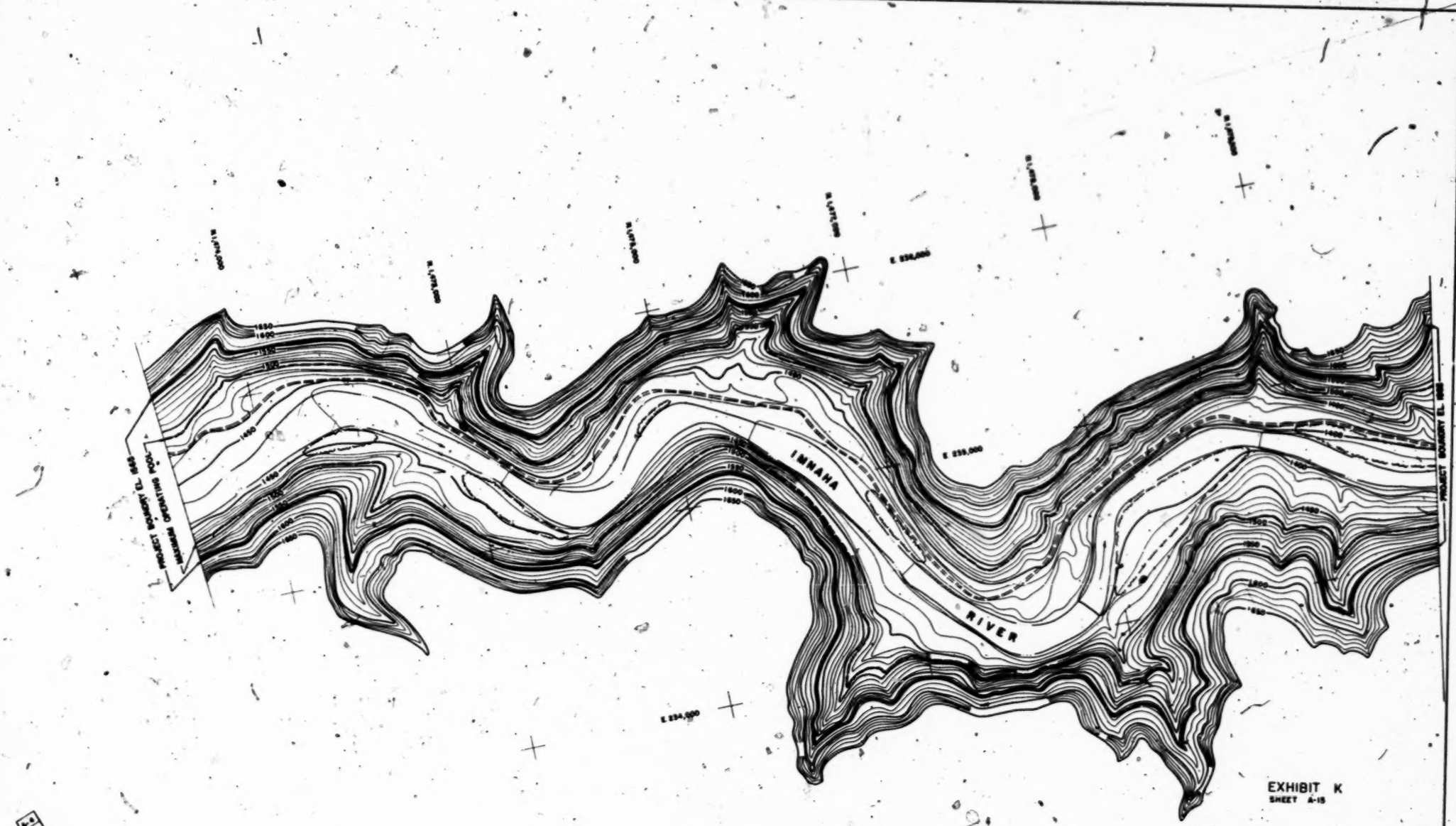


EXHIBIT K
SHEET A-15

300 0 200 400 800 800 1200

Index to Sheets

Additional Sheets

Preliminary Reconnaissance Series

I certify that I supervised the survey of the project lands; that it is correct and accurate, and is correctly shown on this map.

March 10, 1959

Ernest W Fehr Jr

Ernest W Fehr Jr was employed by the applicant to make the survey referred to above.

Scale: 1"=200'

Contour interval - 10'

U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho Inc.

PROJECT Nº2173 IDAHO-OREGON

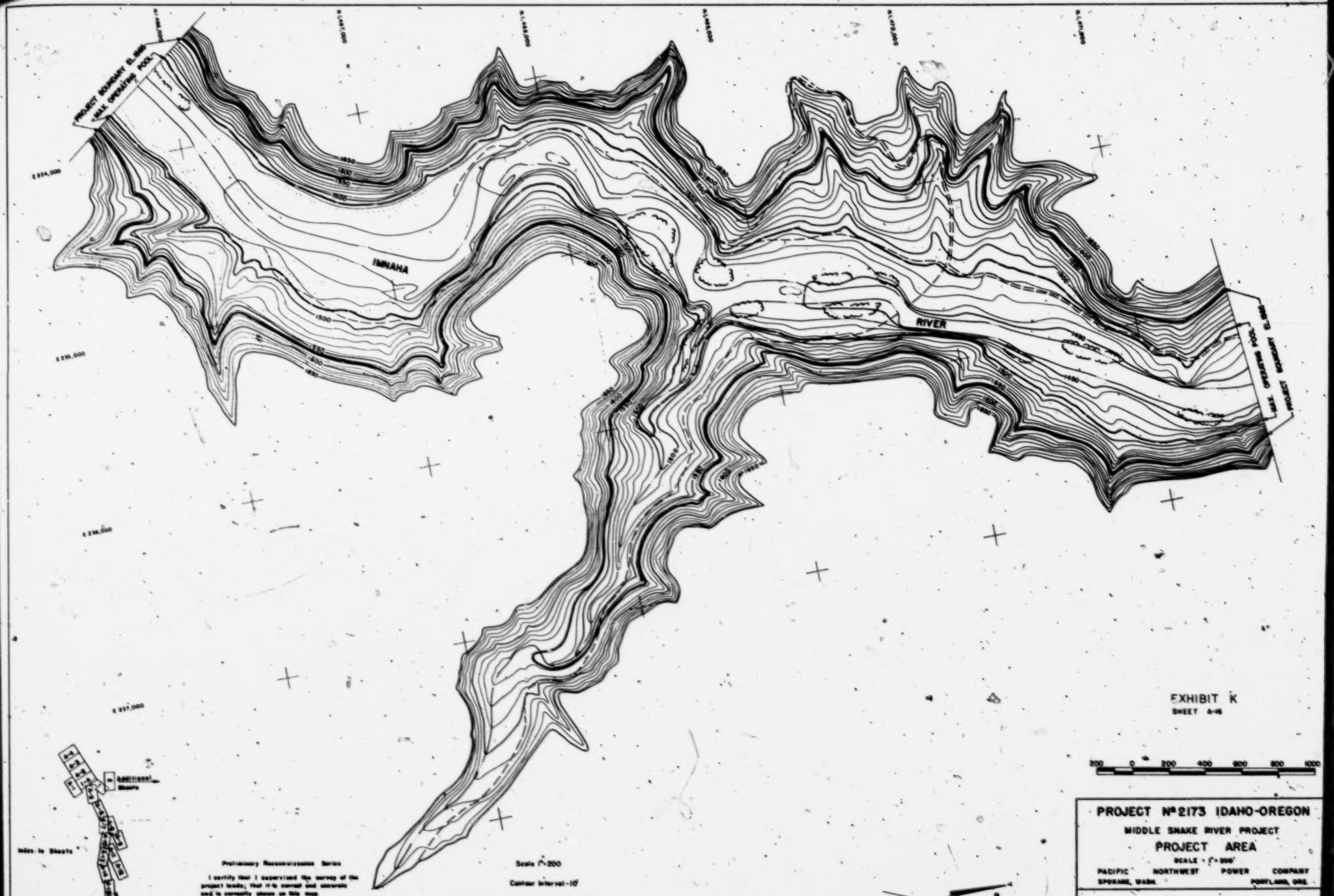
MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE : 1"= 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.


PROJECT BOUNDARY EL.1805
MAX. OPERATING POOL
IMNAHA
RIVER
PROJECT BOUNDARY EL.1805
MAX. OPERATING POOL
EXHIBIT K
SHEET 6-16
PROJECT Nº 2173 IDAHO-OREGON
MIDDLE SNAKE RIVER PROJECT
PROJECT AREA
SCALE 1" = 200'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.
Additional Sheets
Index to Sheets
Preliminary Reconnaissance Survey
I certify that I supervised the survey of the project lands; that it is correct and accurate and is correctly shown on this map.
March10, 1958
Ernest W. Pehr Jr.
Ernest W. Pehr Jr. was employed by the applicant to make the survey referred to above.
Scale 1"=200
Contour Interval-10'
U.S.C.&G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT
1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM
Compiled by Aerial Mapping Co. of Idaho Inc.

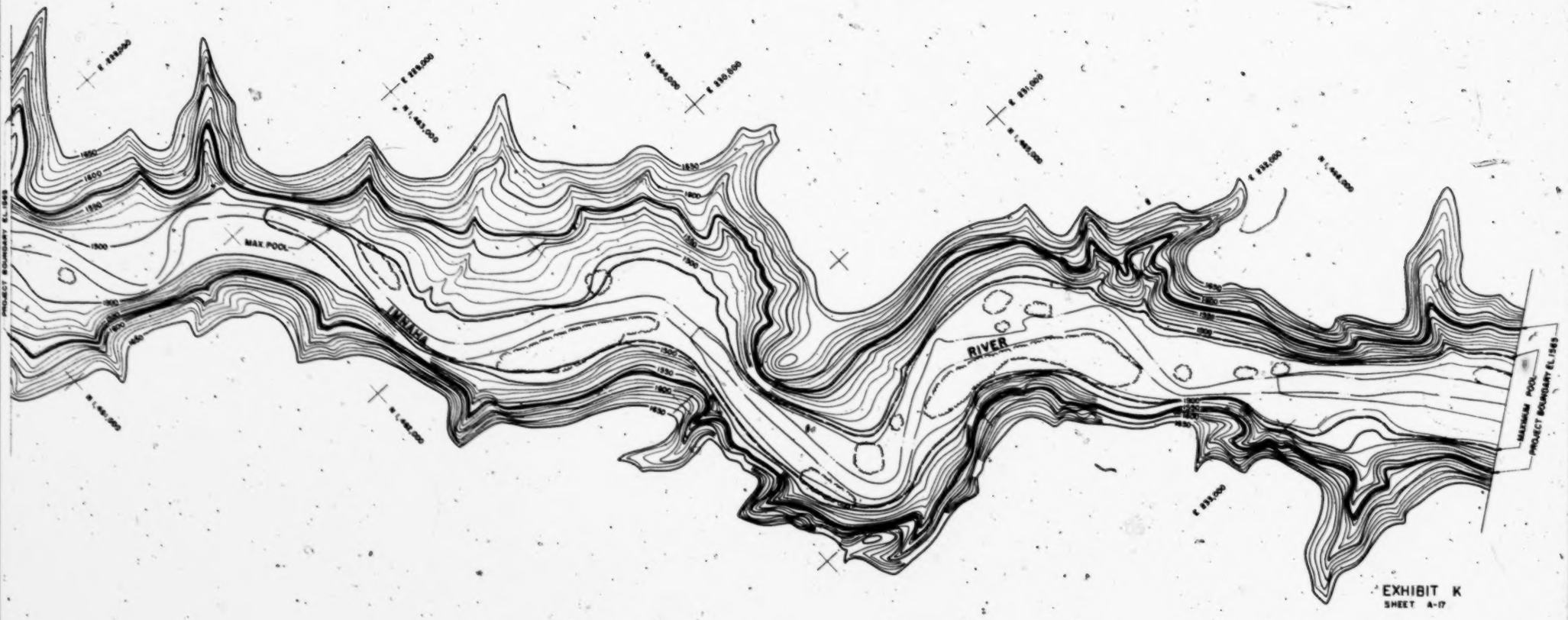


EXHIBIT K
SHEET A-17

Preliminary Reconnaissance Series

I certify that I supervised the survey of the project lands, that it is correct and accurate, and is correctly shown on this map.

March 10, 1958

Ernest W. Pehr Jr.

Ernest W. Pehr Jr. was employed by the applicant to make the survey referred to above.

Scale 1"=200'

Contour Interval - 10'

U.S.C.&G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aprial Mapping Co. of Idaho, Inc.

200 0 200 400 600 800 1000

PROJECT Nº 2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE : 1" = 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

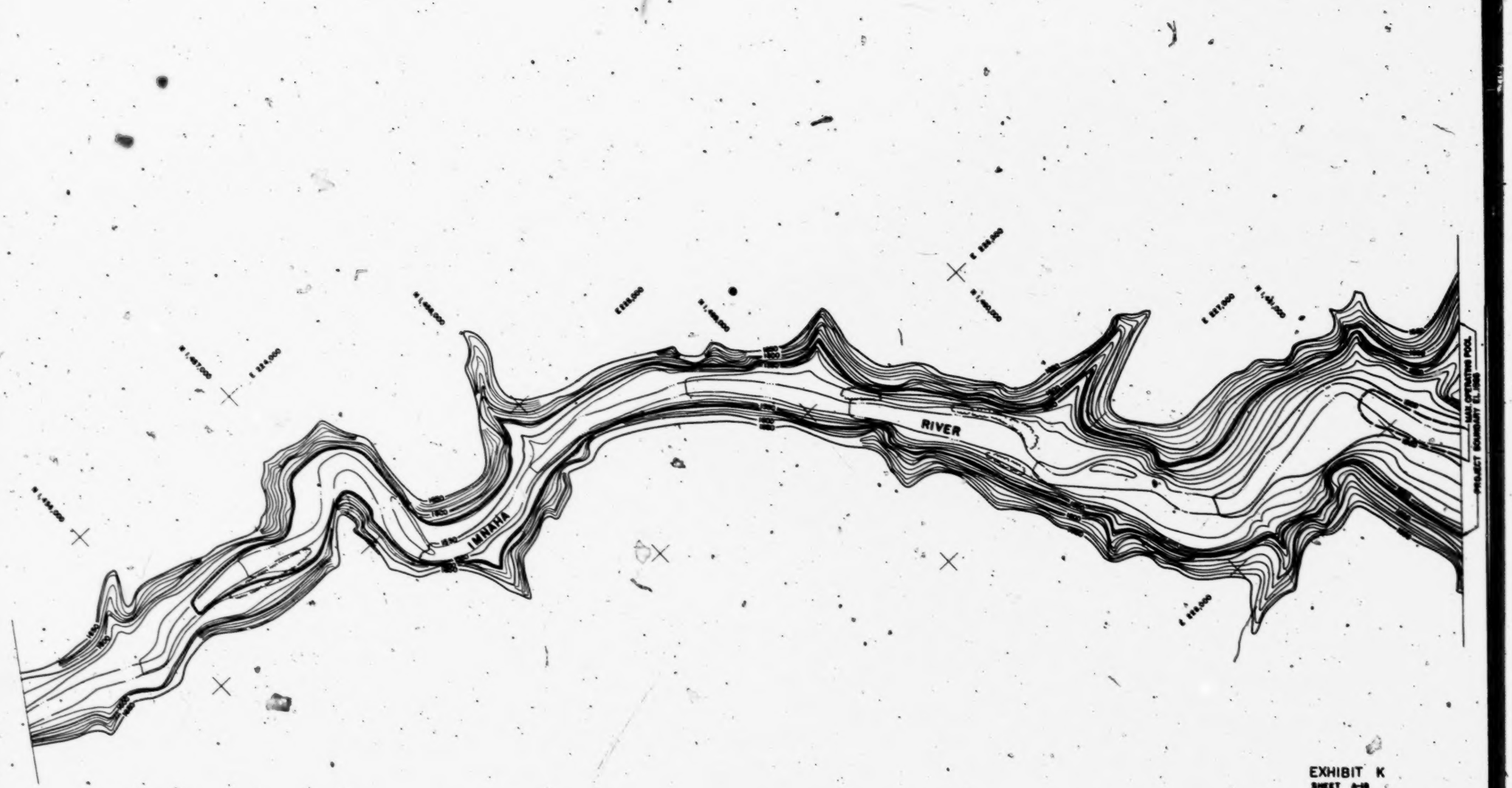
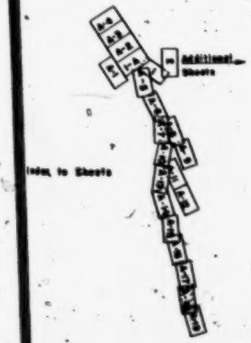


EXHIBIT K
SHEET A-18



Preliminary Reconnaissance Survey

I certify that I supervised the survey of the project lands; that it is correct and accurate, and is correctly shown on this map.

March 10, 1958

Ernest W. Pehr Jr.

Ernest W. Pehr Jr. was employed by the applicant to make the survey referred to above

Scale: 1" = 200'

Contour Interval - 10'

U.S.C. & G.S. MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho, Inc.

200 0 200 400 600 800 1000

PROJECT Nº2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

SCALE - 1" = 200'

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

G-1592

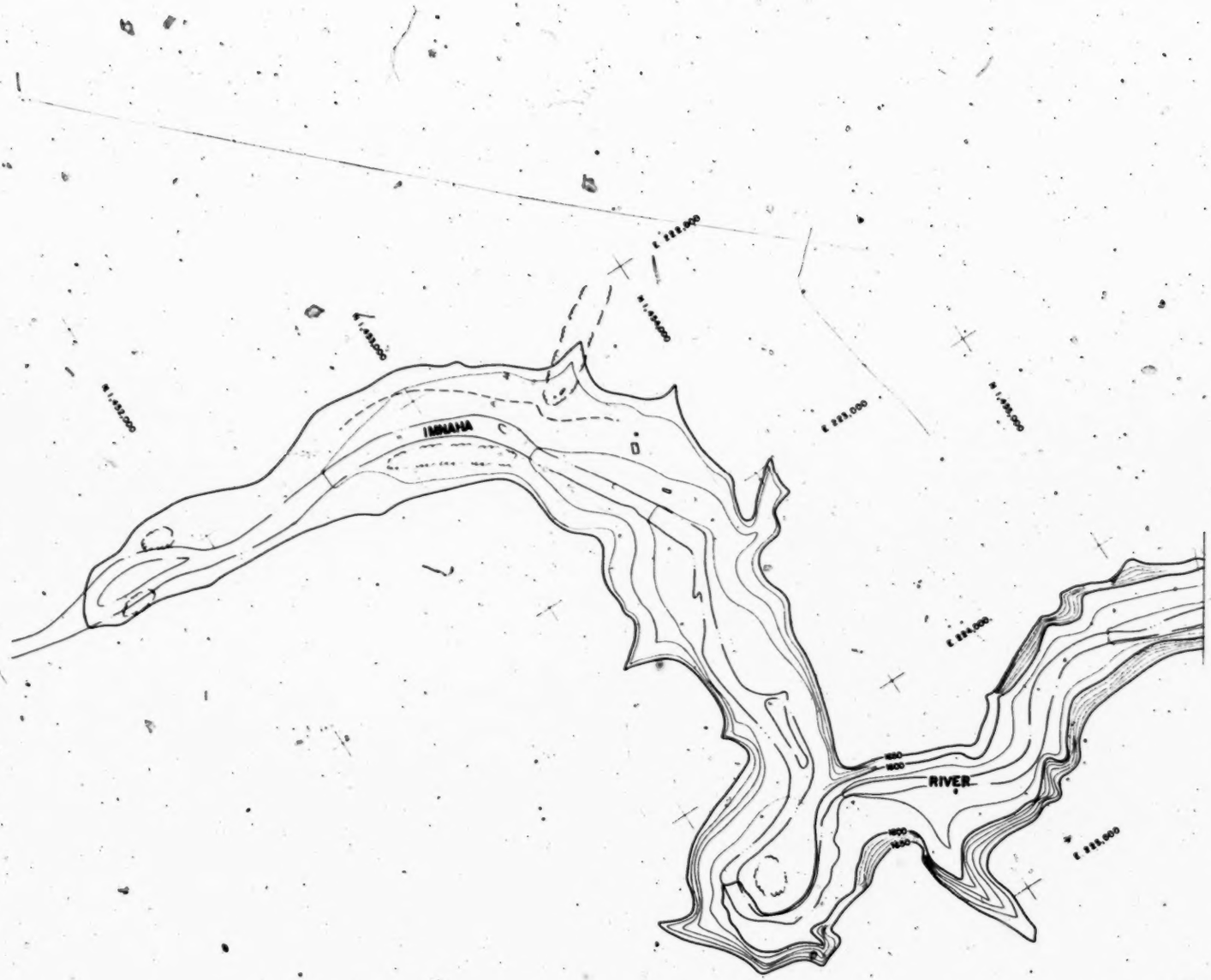


EXHIBIT K
SHEET A-19

Preliminary Reconnaissance Survey

I certify that I supervised the survey of the project lands, that it is correct and accurate, and is correctly shown on the map.

March 10, 1958

Ernest W. Fohr Jr

Ernest W. Fohr Jr was employed by the applicant to make the survey returned to above.

Scale: 1" = 200'

Contour Interval - 10'

USC & GS MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT

1000' GRID based on IDAHO (WEST) RECTANGULAR COORDINATE SYSTEM

Compiled by Aerial Mapping Co. of Idaho, Inc.

200 0 200 400 600 800 1000

PROJECT Nº 2173 IDAHO-OREGON

MIDDLE SNAKE RIVER PROJECT

PROJECT AREA

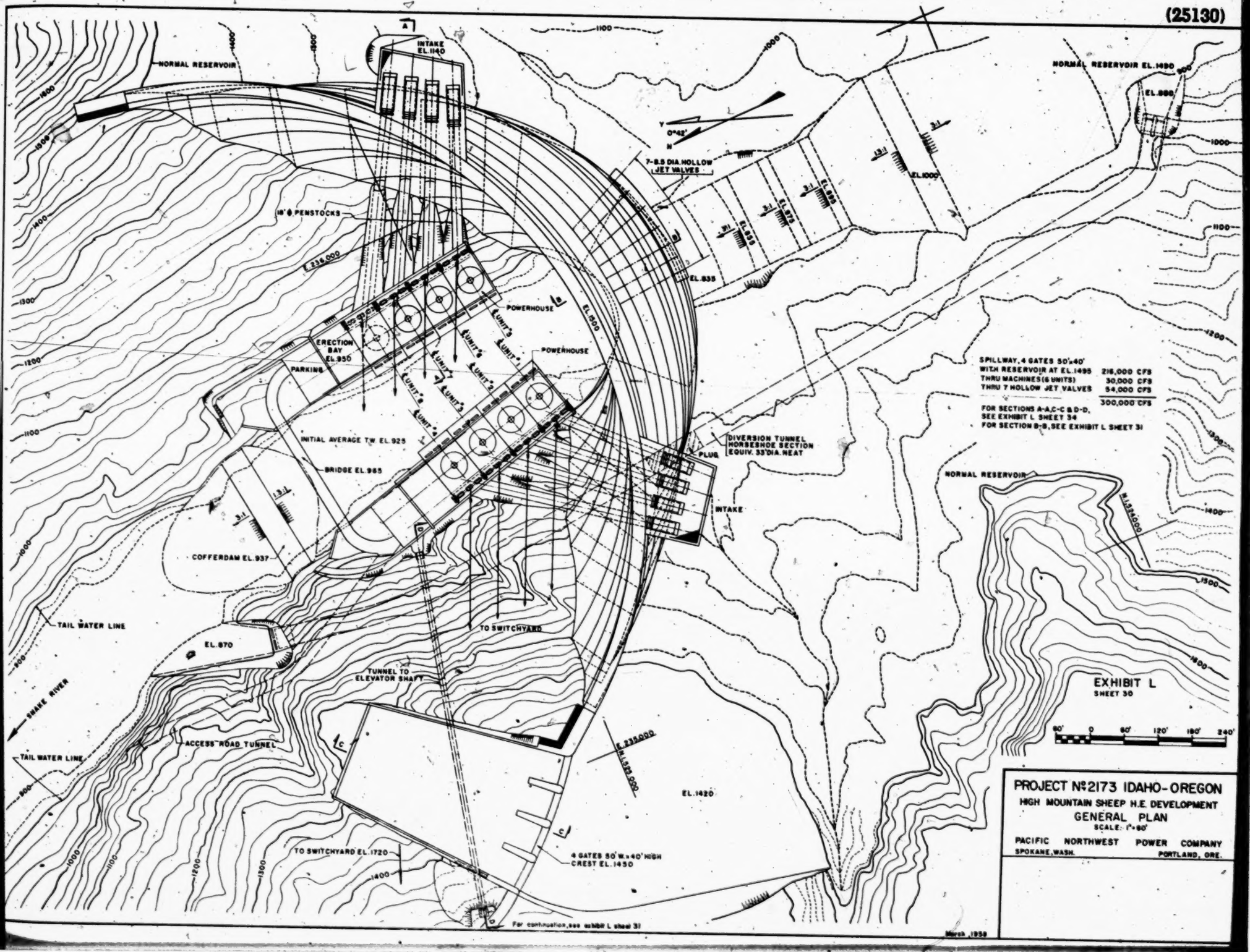
SCALE: 1" = 200'

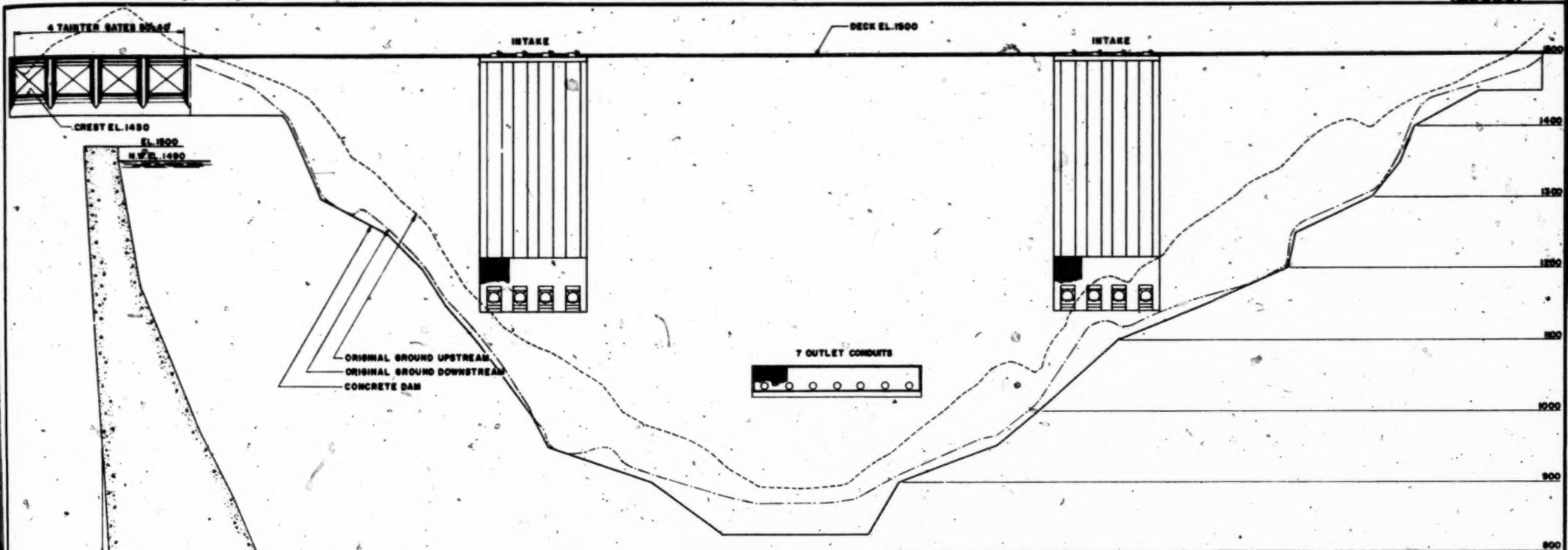
PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

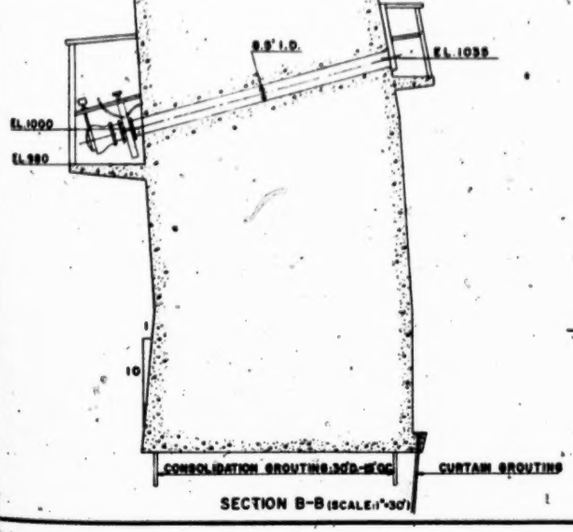
6-159

(25130)

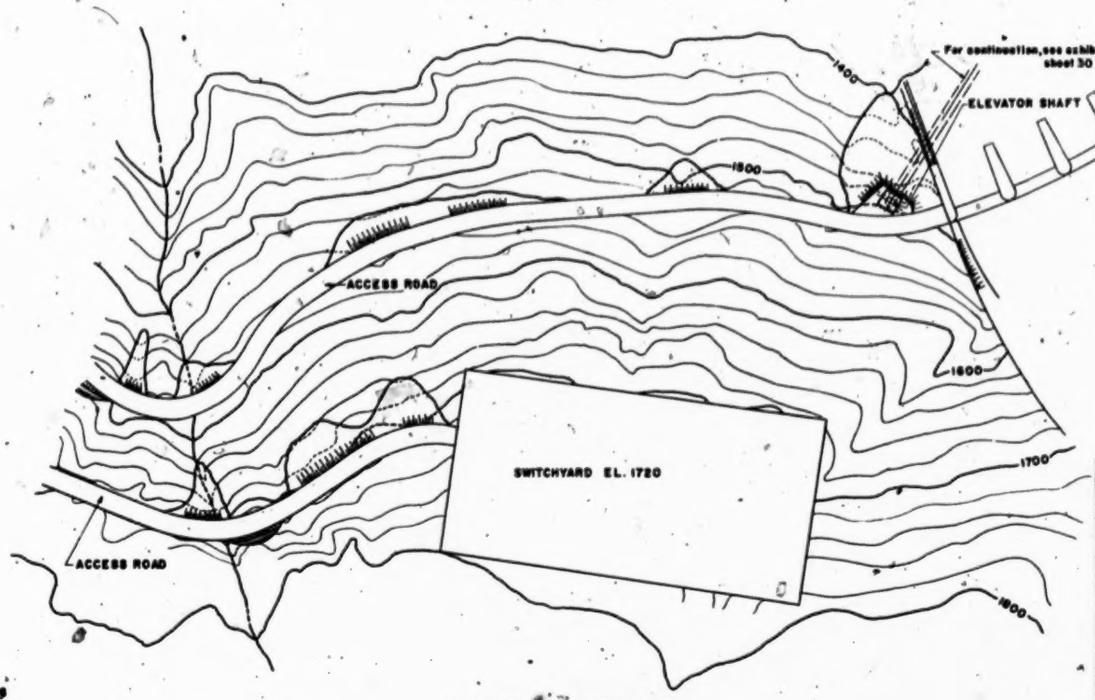

INTAKE EL. 1140
NORMAL RESERVOIR
NORMAL RESERVOIR EL. 1490
EL. 880
7-8.5 DIA. HOLLOW JET VALVES
EL. 1000
EL. 855
EL. 875
EL. 895
EL. 915
18'ϕ PENSTOCKS
E 236,000
POWERHOUSE
EL. 909
ERECTION BAY EL. 950
PARKING
UNIT 1
UNIT 2
UNIT 3
UNIT 4
UNIT 5
UNIT 6
UNIT 7
UNIT 8
INITIAL AVERAGE TW EL. 925
BRIDGE EL. 965
DIVERSION TUNNEL HORSESHOE SECTION (EQUIV. 33'DIA. NEAT
PLUG
INTAKE
COFFERDAM EL. 937
TAIL WATER LINE
EL. 870
TO SWITCHYARD
TUNNEL TO ELEVATOR SHAFT
SNAKE RIVER
ACCESS ROAD TUNNEL
TAIL WATER LINE
E 233,000
N 1,321,000
EL. 1420
TO SWITCHYARD EL. 1720
4 GATES 50' W. x 40' HIGH CREST EL. 1450
For continuation, see exhibit L sheet 31
SPILLWAY, 4 GATES 50'x40' WITH RESERVOIR AT EL. 1495 215,000 CFS
THRU MACHINES (8 UNITS) 30,000 CFS
THRU 7 HOLLOW JET VALVES 54,000 CFS
300,000 CFS
FOR SECTIONS A-A, C-C & D-D, SEE EXHIBIT L SHEET 34
FOR SECTION B-B, SEE EXHIBIT L SHEET 31
NORMAL RESERVOIR
N 1,324,000
EXHIBIT L
SHEET 30
60' 0 60' 120' 180' 240'
PROJECT Nº 2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
GENERAL PLAN
SCALE: 1"=60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.
March 1959



DEVELOPED PROFILE LOOKING DOWNSTREAM



SECTION B-B (SCALE: 1"=30')



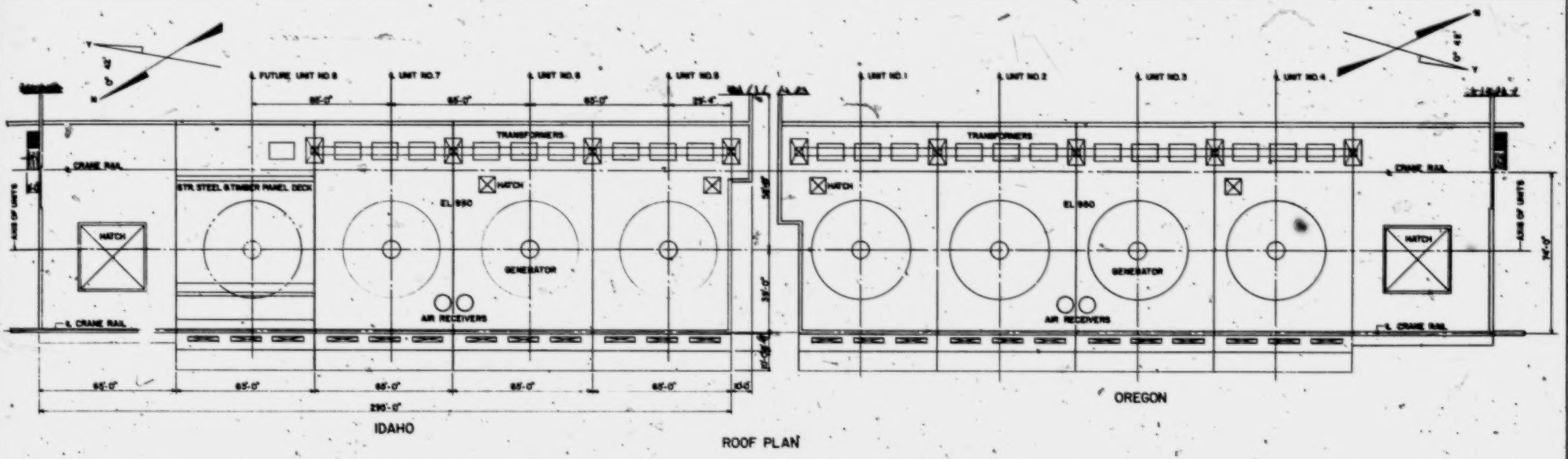
PLAN OF SWITCHYARD AREA

EXHIBIT L
SHEET 31

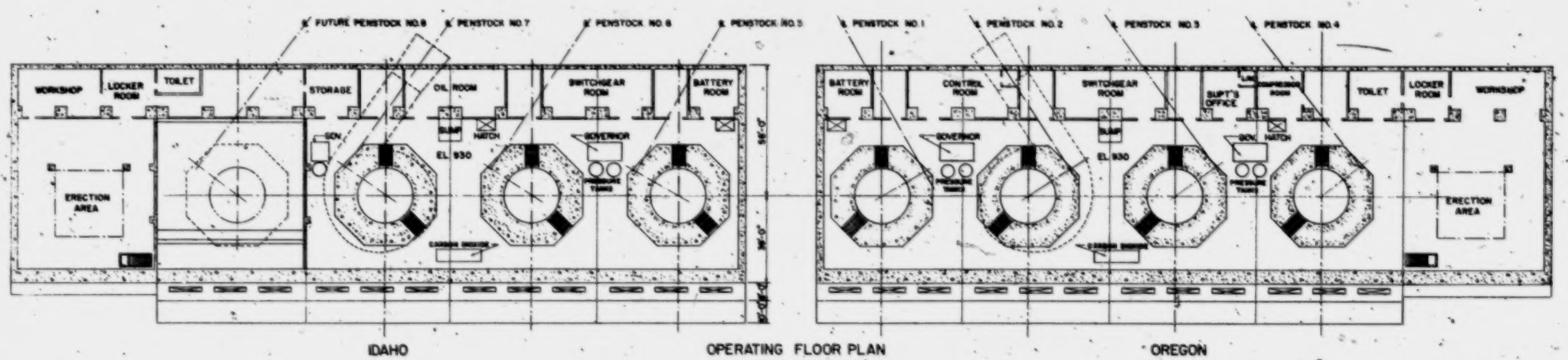
60' 0 60' 120' 180' 240' 300'

PROJECT Nº 2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
PROFILE AND SECTIONS
SCALE: 1"=60' (UNLESS NOTED)
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

March, 1958

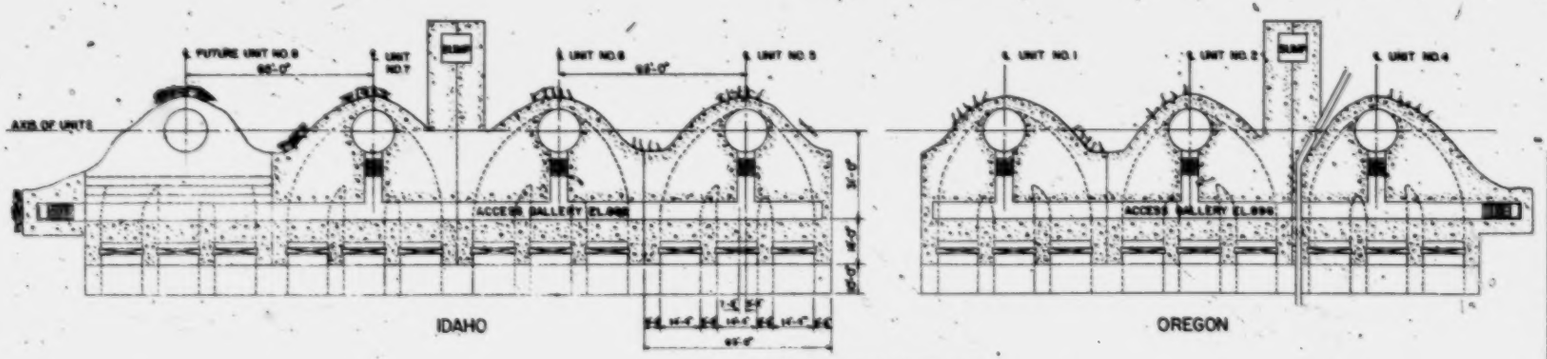


ROOF PLAN



OPERATING FLOOR PLAN

EXHIBIT L
SHEET 32

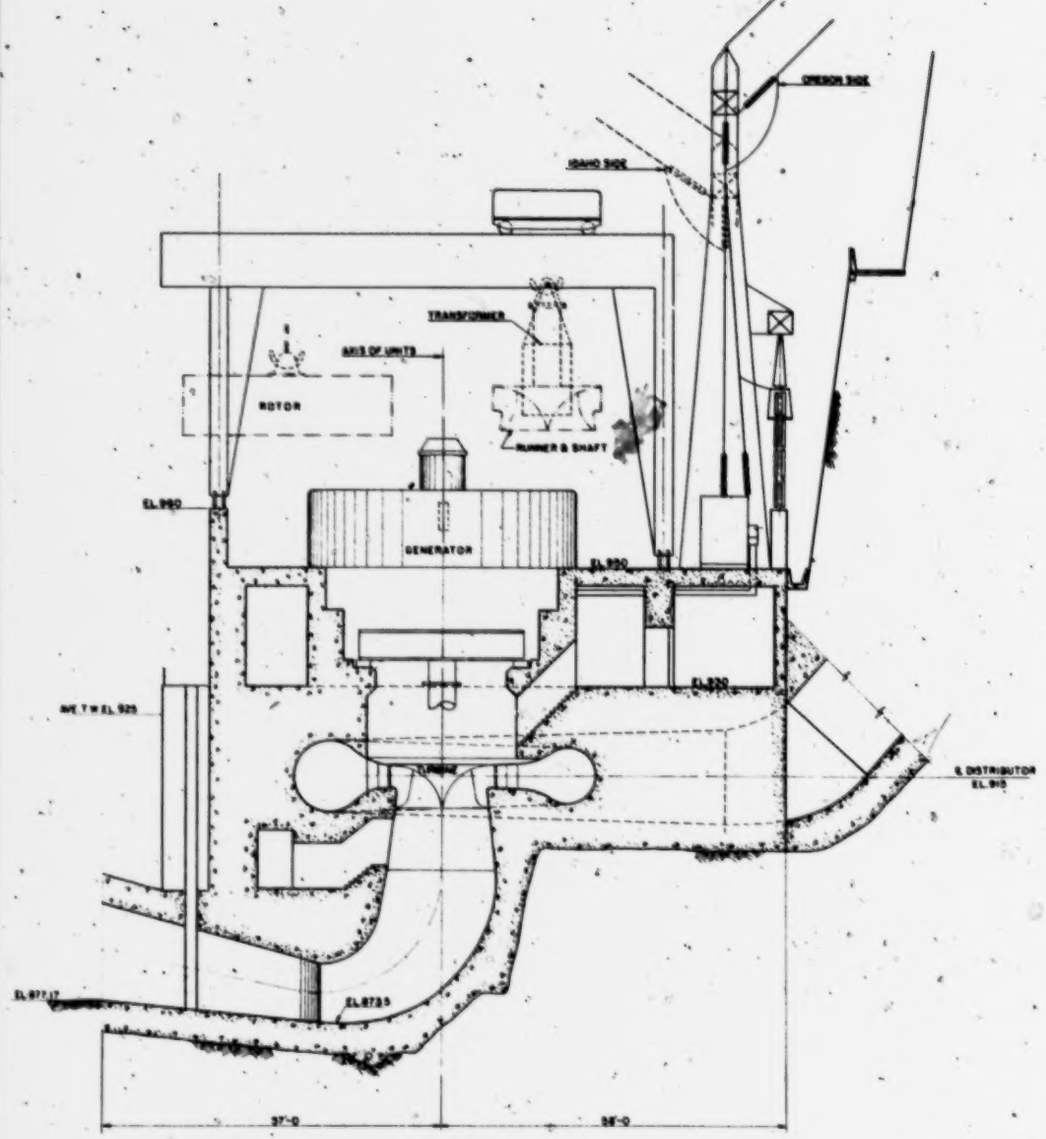


ACCESS GALLERY PLAN

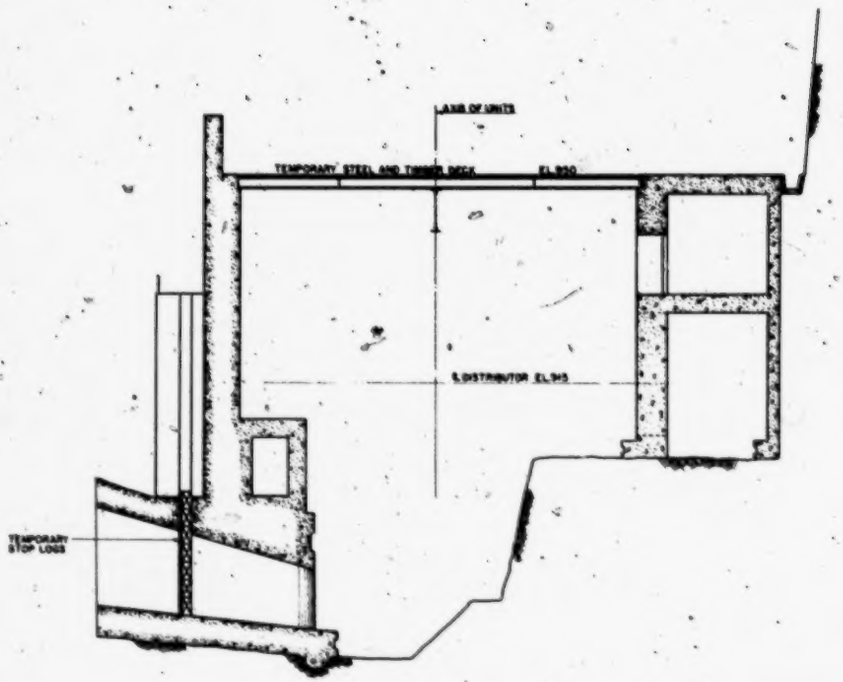
SCALE: 1" = 20'

PROJECT N°2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
POWER HOUSE-PLANS
SCALE: 1" = 60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

March, 1958



CROSS SECTION THRU POWER HOUSE UNITS 1 TO 7



CROSS SECTION THRU POWER HOUSE FUTURE UNIT 8

EXHIBIT L
SHEET 33

EQUIPMENT

TURBINE: SEVEN - 270,000 H.P. AT 940 FT. NET HEAD, FULL GATE 150 R.P.M.

GENERATOR: SEVEN - 185,000 K.W., 0.90 P.F., 3-PHASE, 60-CYCLE, MAXIMUM CAPABILITY 190,000 K.W.

MAIN TRANSFORMER: TWENTY-ONE SINGLE PHASE, 60 CYCLE, 13.8-230 K.V. 65,000 K.V.A., PLUS ONE SPARE

INTAKE GATES: FIXED WHEEL TYPE, 21 FT. WIDE BY 24 FT. HIGH, ONE FOR EACH PENSTOCK, 3901 CAPACITY INDIVIDUAL HOIST

DRAFT TUBE GATE: TWO SETS OF 3 GATES EACH, SLIDE TYPE, 18.3 FT. WIDE BY 18.3 FT. HIGH

MAIN GANTRY CRANE: ONE FOR EACH POWER HOUSE, 700 TON CAPACITY

DRAFT TUBE GATE HOOK: ONE FOR EACH POWER HOUSE, 80 TON CAPACITY

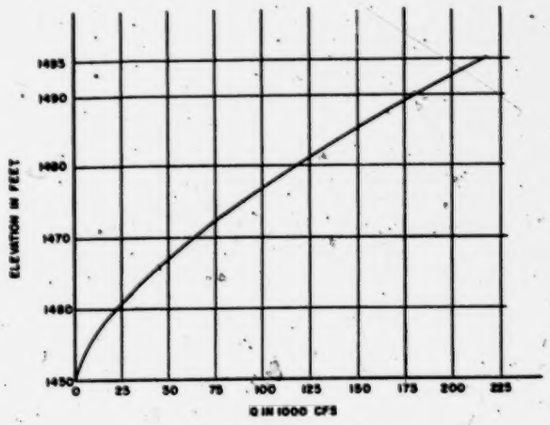
PROJECT Nº2173 IDAHO - OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
POWER HOUSE CROSS SECTIONS
SCALE: 1" = 10'

PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

MARCH 1958

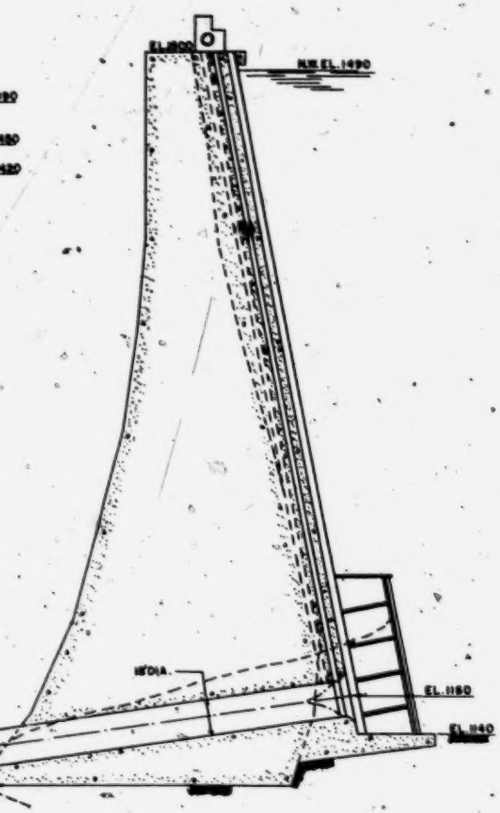
G-158896

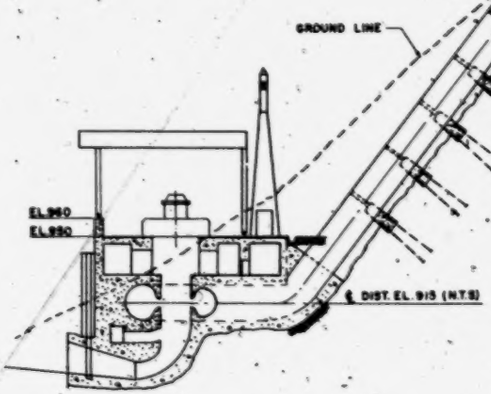
SPILLWAY SECTION C-C



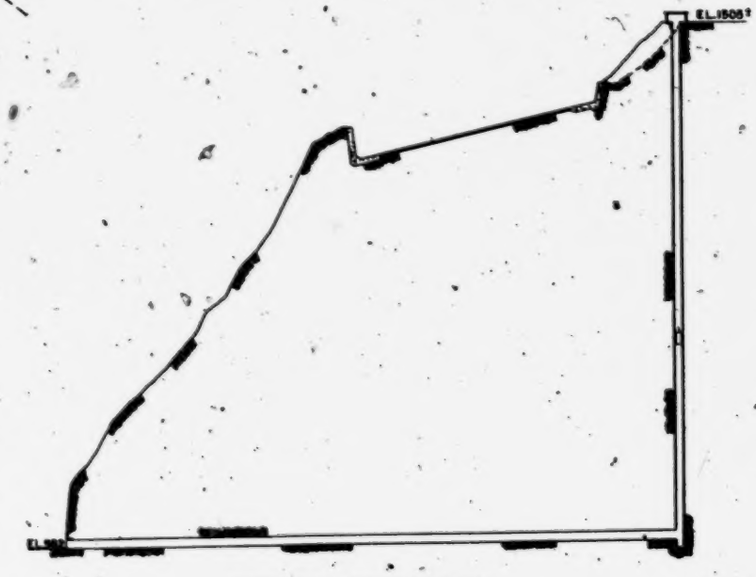
DISCHARGE CURVE FOR SPILLWAY

NOTE:
FOR LOCATION OF SECTIONS, SEE EXHIBIT L, SHEET 30





SECTION A-A
SCALE 1"=30'



SECTION D-D THROUGH ELEVATOR

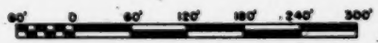
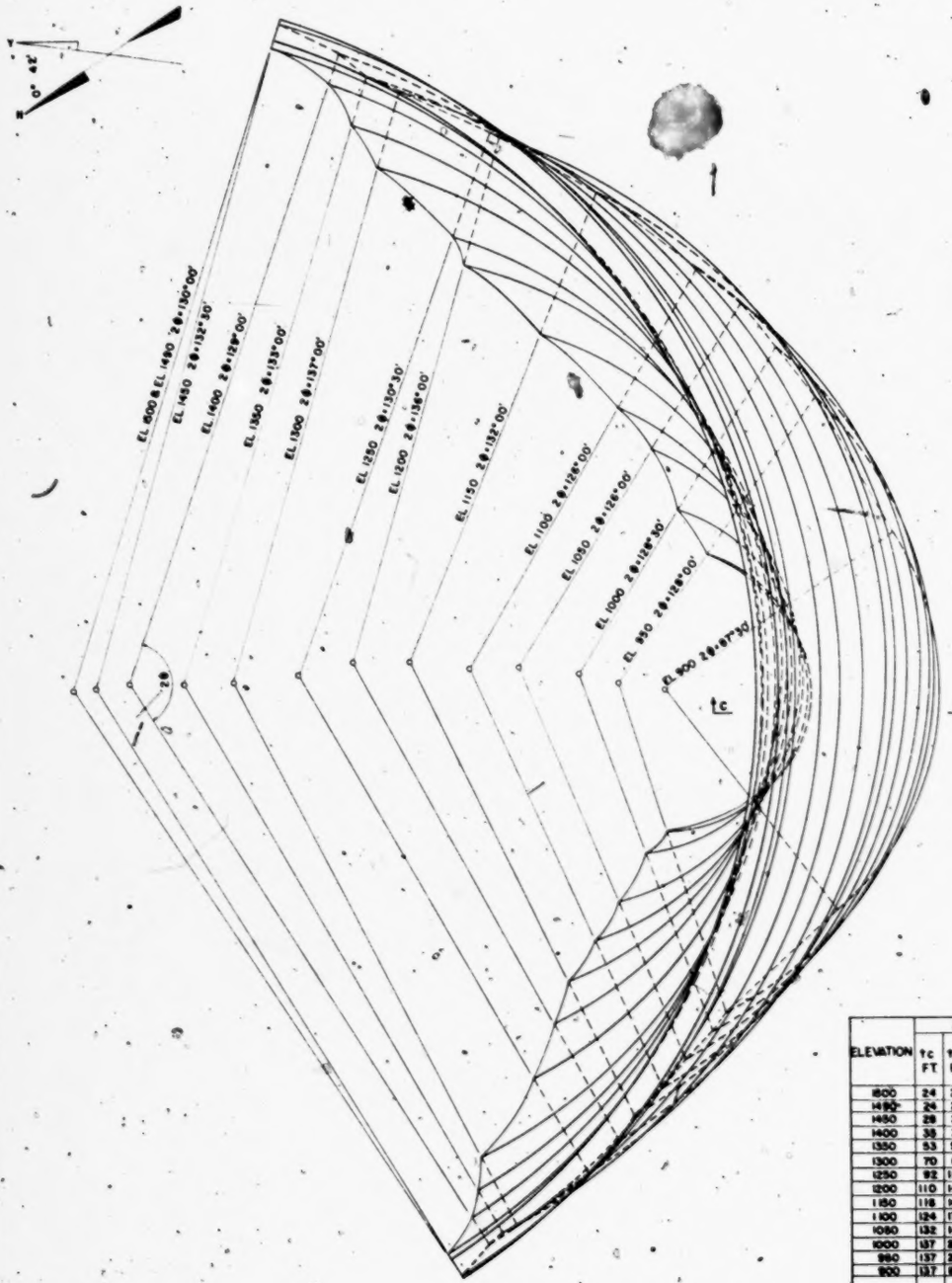
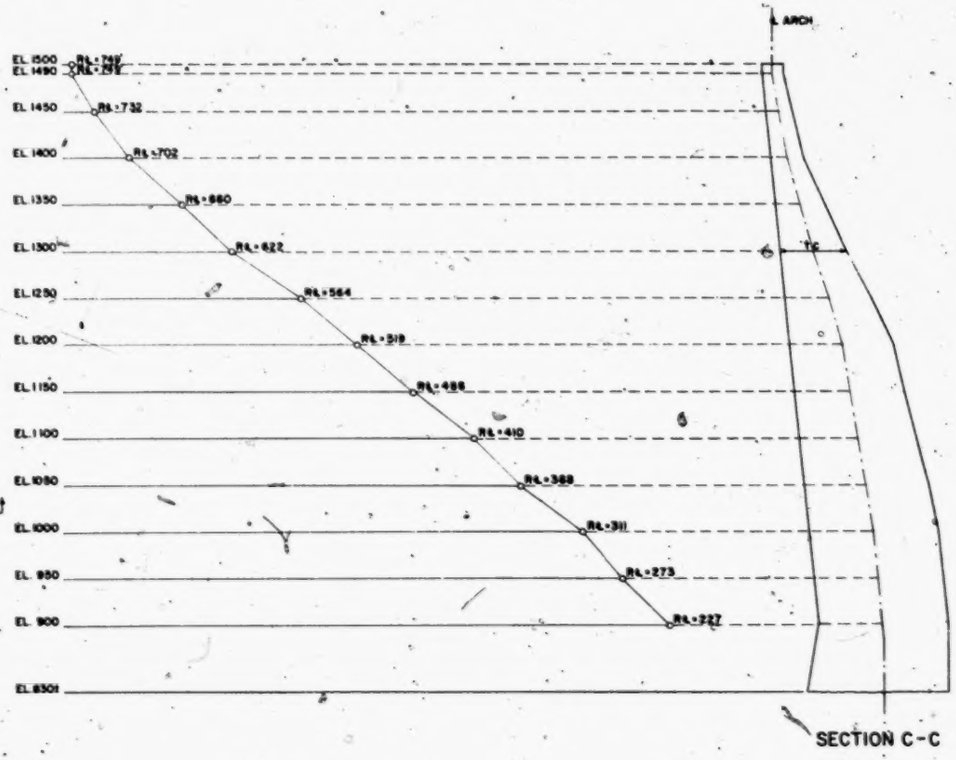


EXHIBIT L
SHEET 34

PROJECT Nº2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
INTAKE AND SPILLWAY SECTIONS
SCALE: 1"=60' (UNLESS NOTED)
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

March, 1958





SECTION C-C

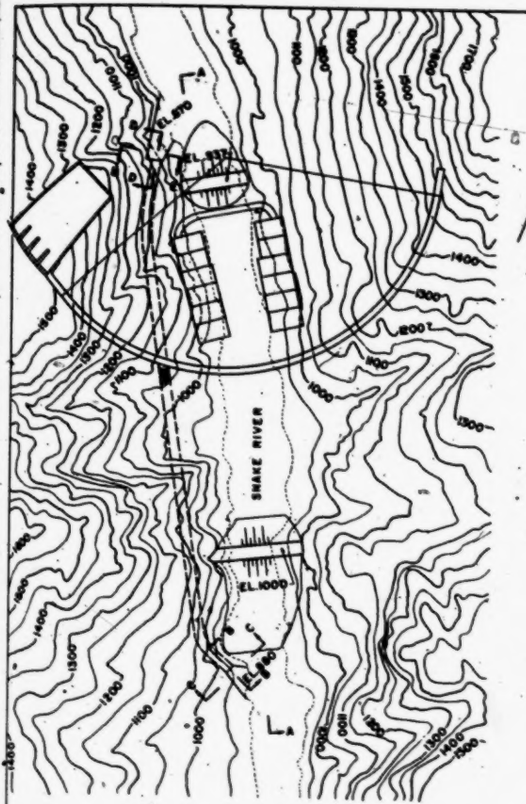
ELEVATION	ARCH DIMENSIONS						ARCH STRESSES (LBS/SQ IN)				
	tc FT	to FT	to/tc	2θ DEGREES	R4 FT	tc/R4	HEAD FT	POND CROWN EXT.	POND CROWN INT.	EL 1490 ABUT. EXT.	EL 1490 ABUT. INT.
1500	24	24	1.0	130.00	769	.032					
1490	24	24	1.0	130.00	769	.032					
1450	28	28	1.0	132.50	732	.038	40	508	432	380	588
1400	35	35	1.0	129.00	706	.050	90	900	692	608	999
1350	53	58.3	1.1	133.00	680	.080	140	940	615	441	996
1300	70	84	1.2	137.00	622	.112	190	970	552	314	995
1250	92	119.6	1.3	130.50	564	.163	240	980	348	98	977
1200	110	143	1.3	136.00	519	.212	290	870	278	40	957
1150	118	182.5	1.4	132.00	488	.253	340	900	187	-90	950
1100	124	173.6	1.4	128.00	410	.303	390	880	97	-98	998
1080	132	198	1.5	126.00	388	.389	440	838	44	-100	988
1000	137	205.5	1.5	128.50	311	.417	490	732	0	-98	832
950	137	205.5	1.5	128.00	273	.502	540	993	-94	-115	709
900	137	205.5	1.5	87.50	227	.877					

EXHIBIT L
SHEET 35

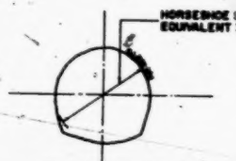
PROJECT Nº2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
ARCH DAM
SCALE: 1" = 60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

March, 1958

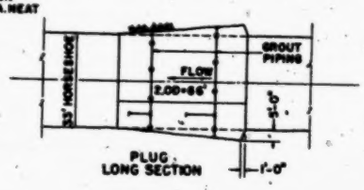
G-158894



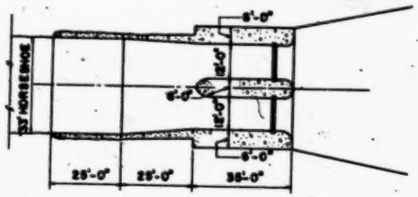
PLAN
SCALE: 1"=200'



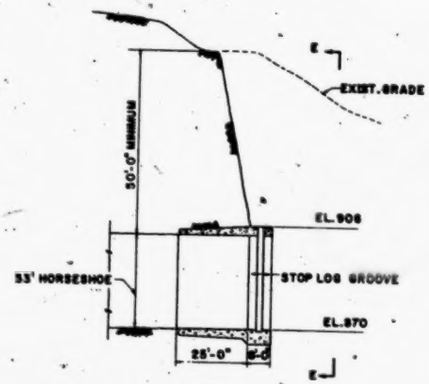
TYPICAL SECTION
THROUGH DIVERSION TUNNEL



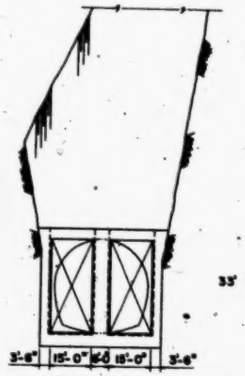
PLUG
LONG SECTION



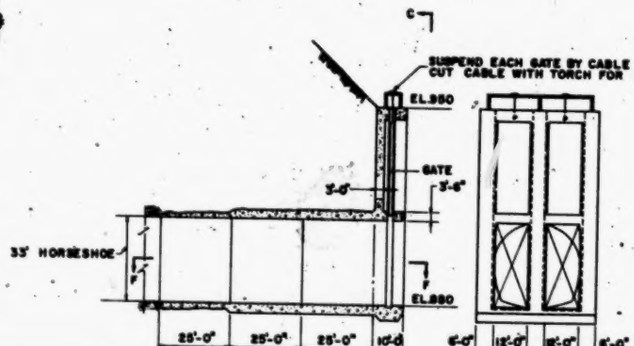
SECTION F-F



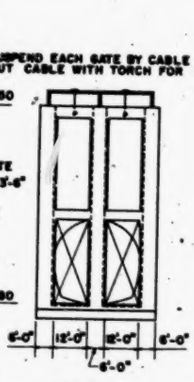
SECTION D-D



SECTION E-E



SECTION B-B



SECTION C-C

USE OF RATING CURVES

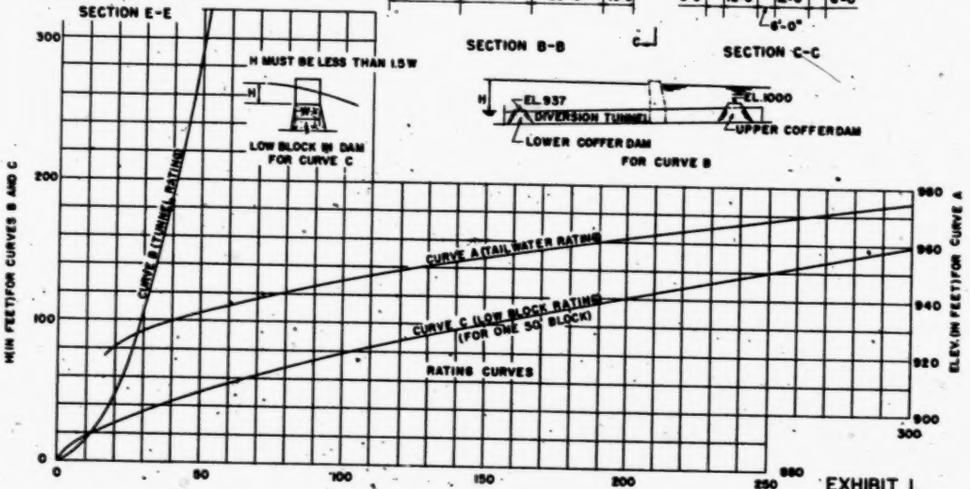
CASE A: ALL FLOW THROUGH DIVERSION TUNNEL.

I. WITHOUT OVERTOPPING UPSTREAM COFFERDAM.
ASSUME FLOW IN RIVER - 25,000 CFS.
T.W.EL. (CURVE A) 923.5
HEAD(H) ON DIVERSION TUNNEL (CURVE B) 73.5'
EL. HEAD WATER = 923.5 + 73.5 = 997

II. OVERTOPPING UPSTREAM COFFERDAM.
ASSUME FLOW IN RIVER - 40,000 CFS.
TAILWATER ELEV. (CURVE A) 930
HEAD(H) ON DIVERSION TUNNEL (CURVE B) 186'
EL. HEADWATER = 930 + 186 = 1116

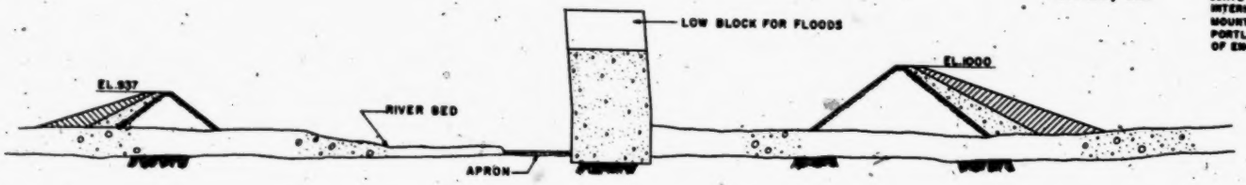
CASE B: FLOW THROUGH BOTH DIVERSION TUNNEL AND LOW BLOCK IN DAM.
ELEV. ON LOW BLOCK DEPENDS UPON STAGE OF CONSTRUCTION.
ASSUME LOW BLOCK SILL AT ELEV. 1150
ASSUME FLOW IN RIVER 60,000 CFS. OBTAIN TW. EL. FROM CURVE A. OBTAIN COMBINED Q FROM CURVES B & C

Q TUNNEL =		45,000 CFS
CURVE A, T.W. EL. EV.	935	
CURVE B, H	236	
HEADWATER ELEV.	1171	
CURVE C, H	21	
Q LOW BLOCK		15,000 CFS
TOTAL Q		60,000 CFS

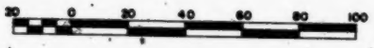


CURVE A TAKEN FROM:
INTERIM REPORT #4,
MOUNTAIN SHEEP DAM,
PORTLAND DISTRICT CORPS
OF ENGINEERS, 12-22-47

EXHIBIT L
SHEET 36



SECTION A-A
SCALE: 1"=100'

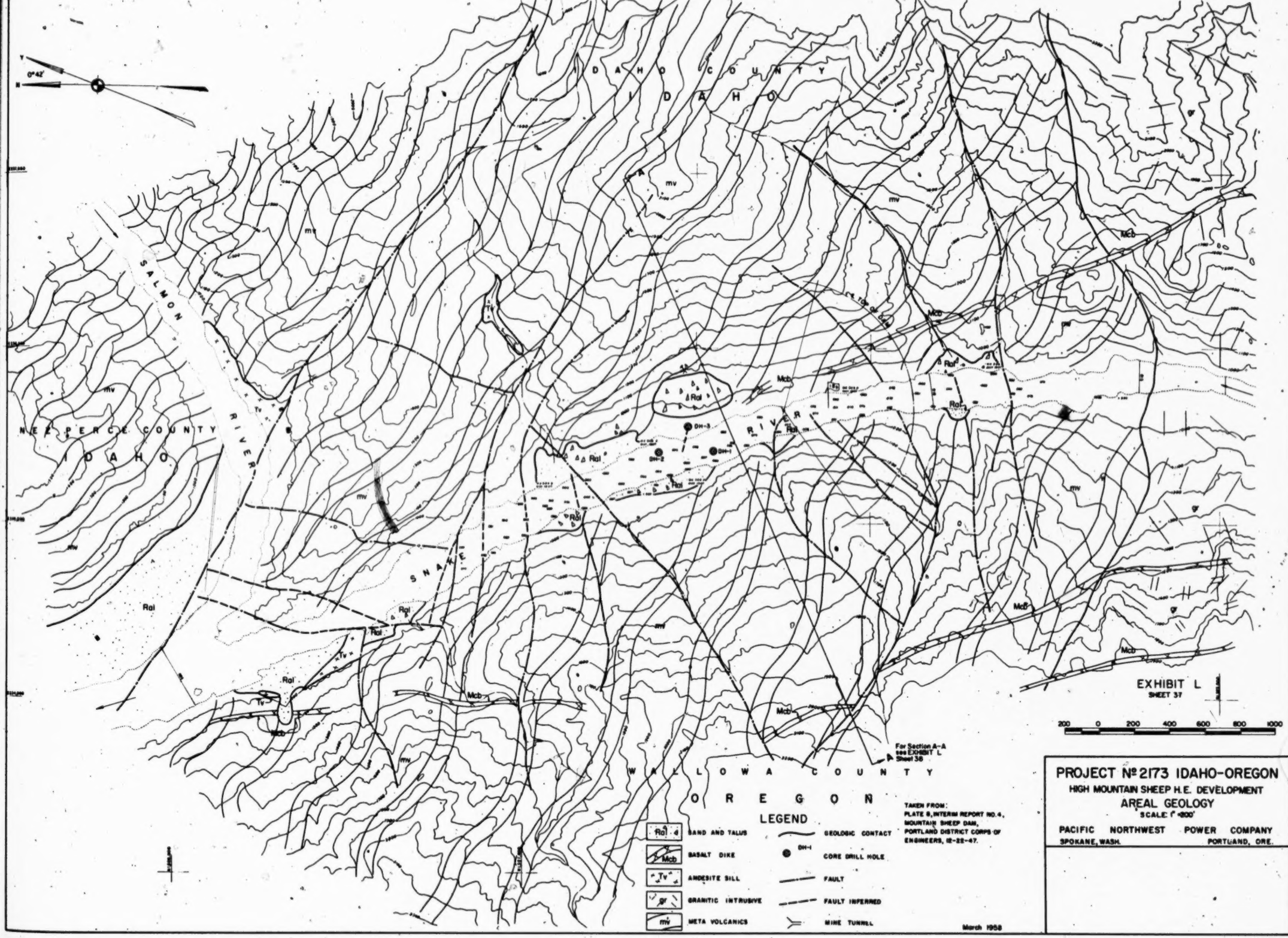


SCALE: 1"=20'

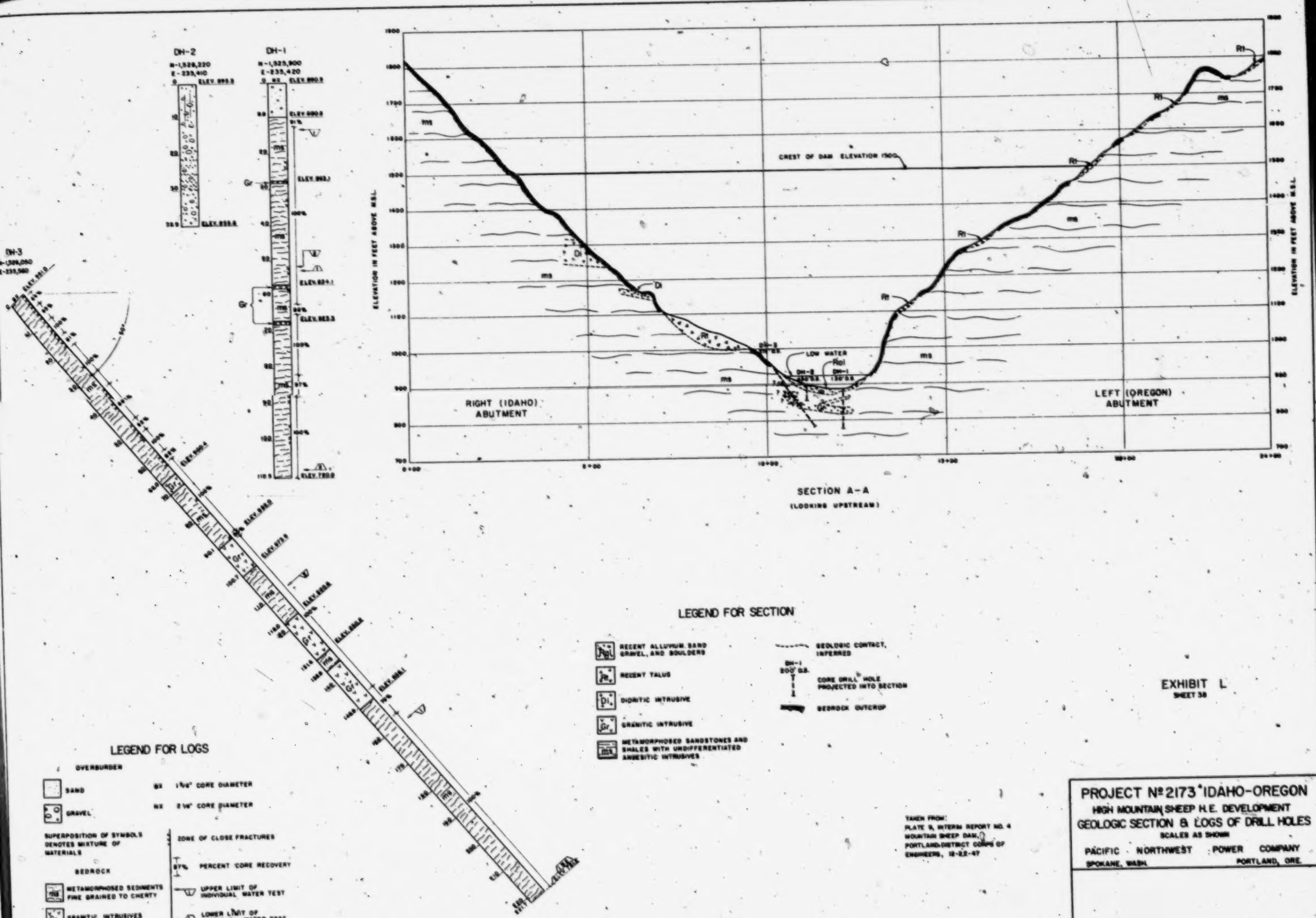
PROJECT Nº2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
DIVERSION FACILITIES

PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

March, 1958


IDAHO COUNTY
IDAHO
NEZ PERCE COUNTY
IDAHO
SALMON RIVER
SNAKE RIVER
WALLOWA COUNTY
OREGON
0°42'
Qal
mv
Mcb
Tv
DH-1
DH-2
DH-3
EXHIBIT L
SHEET 37
200 0 200 400 600 800 1000
For Section A-A
see EXHIBIT L
Sheet 38
A
A
LEGEND
SAND AND TALUS
BASALT DIKE
ANDESITE SILL
GRANITIC INTRUSIVE
META VOLCANICS
GEOLOGIC CONTACT
CORE DRILL HOLE
FAULT
FAULT INFERRED
MINE TUNNEL
TAKEN FROM:
PLATE 8, INTERIM REPORT NO. 4,
MOUNTAIN SHEEP DAM,
PORTLAND DISTRICT CORPS OF
ENGINEERS, 12-22-47.
March 1958
PROJECT Nº 2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
AREAL GEOLOGY
SCALE: 1" =800'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

G-158900


DH-2
N-1,528,220
E-235,440
ELEV. 995.5
DH-1
N-1,525,900
E-235,420
ELEV. 990.3
DH-3
CREST OF DAM ELEVATION 1500
LOW WATER
RIGHT (IDAHO) ABUTMENT
LEFT (OREGON) ABUTMENT
ELEVATION IN FEET ABOVE M.S.L.
SECTION A-A
(LOOKING UPSTREAM)
LEGEND FOR LOGS
OVERBURDEN
SAND
GRAVEL
SUPERPOSITION OF SYMBOLS DENOTES MIXTURE OF MATERIALS
BEDROCK
METAMORPHOSED SEDIMENTS FINE GRAINED TO CHERTY
GRANITIC INTRUSIVES
1 5/8" CORE DIAMETER
2 1/8" CORE DIAMETER
ZONE OF CLOSE FRACTURES
87% PERCENT CORE RECOVERY
UPPER LIMIT OF INDIVIDUAL WATER TEST
LOWER LIMIT OF INDIVIDUAL WATER TEST
LEGEND FOR SECTION
RECENT ALLUVIUM SAND GRAVEL, AND BOULDERS
RECENT TALUS
DIORITIC INTRUSIVE
GRANITIC INTRUSIVE
METAMORPHOSED SANDSTONES AND SHALES WITH UNDIFFERENTIATED ANDESITIC INTRUSIVES
GEOLOGIC CONTACT, INFERRED
DH-1 800' S.S.
CORE DRILL HOLE PROJECTED INTO SECTION
BEDROCK OUTCROP
TAKEN FROM:
PLATE 9, INTERIM REPORT NO. 4
MOUNTAIN SHEEP DAM
PORTLAND DISTRICT CORPS OF ENGINEERS, 12-22-47
March 1958.
EXHIBIT L
SHEET 38
PROJECT Nº 2173 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
GEOLOGIC SECTION & LOGS OF DRILL HOLES
SCALES AS SHOWN
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.
G-158901

25286

(Filed April 18, 1958)

BEFORE THE FEDERAL POWER COMMISSION

Project No. 2243

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Motion to Dismiss Application

National Hells Canyon Association, Inc., and Northwest Public Power Association, Petitioners for Intervention herein, moved that the application in this proceeding be dismissed forthwith, for the following reasons:

1. Said application is so vague and indefinite as to contravene the Federal Power Act and the Rules and Regulations of the Commission which contemplate license applications only for specific, clearly defined projects; moreover, it seeks improperly to embrace multiple alternative—albeit unidentified—projects;

2. Whether the application be deemed a license application for a high Mountain Sheep project or for conflicting projects, it merely raises for readjudication the issue already adjudicated in Project No. 2173;

3. And, if the application be deemed a license application solely for a high Mountain Sheep dam, it is grossly incomplete and far short therefore of satisfying the Commission's Rules and Regulations, especially §§ 4.40, 4.41 and 4.42 thereof.

(25286)

A memorandum in support of this motion is attached.

Respectfully submitted,

HILMER & COOPER
Attorneys for Petitioners
1025 Conn. Avenue, N.W.
Washington 6, D. C.

By: EVELYN N. COOPER

April 18, 1958

Subscribed and sworn to before me this 18th day of April, 1958.

MARY J. BRUMLEY
Notary Public, D. C.

SEAL

My Commission Expires September 14, 1962

25291

Files 1

Project No. 2243-Oregon and Idaho

April 23, 1958

Robert D. Yeomans, Secretary
Pacific Northwest Power Company
P. O. Drawer 1445
Spokane 10, Washington

Dear Mr. Yeomans:

Reference is made to the application for license for the Middle Snake River project No. 2243 filed with the Commission on March 31, 1958. The Commission staff has made a preliminary examinaiton of the application and the exhibits filed and finds that additional information and data

are required for an understanding of the proposed project, including the proposed project boundary.

It is noted that Exhibits H and I are to be submitted at a later date. These exhibits should be supplemented by your power study and power market study for the proposed project. In this connection it is requested that you furnish a copy of your transmission study.

It is also noted that Exhibit L drawings filed with the application show area geology, a geologic section, and logs of drill holes taken from "Interim Report No. 4, Mountain Sheep Dam, Portland District Corps of Engineers" dated December 22, 1947. It is requested that you furnish a geology report for the Middle Snake River project. It is also requested that you advise the Commission of your plan for foundation exploration and when the exploration will be completed and submitted as a supplement to your application.

In connection with any dam which you proposed to construct, it is requested that you furnish design criteria and analysis and information as to your plans for additional analysis of the structure prior to construction.

With reference to the Exhibit N which you advise will be furnished later, it is requested that an estimate of cost with breakdown by major items for the Middle Snake River project be submitted as soon as possible. This should be supplemented by a detailed estimate of cost showing quantities and unit costs, together with other related construction costs. It is also requested that you submit your rereport on economic feasibility of the proposed Middle Snake River project.

25292

It is requested that you advise as to the date when the data outlined above may be expected. Page 4 of the appli-

(25292)

cation states that applicant proposed to prepare and p
sent appropriate information on alternative developme
Please advise as to when such information will be s
mitted.

A copy of this letter is being furnished to Smith, Gr
Hill & Rodgers, and Leighton & Sherline.

Very truly yours,

J. H. GUTRIDE
Secretary

PWR
AGS:mph
4/17/58

cc: Smith, Gray, Hill & Rodgers
Leighton & Sherline
SFRO
OGC
DLP

25293

PACIFIC NORTHWEST POWER COMPANY
P. O. DRAWER 1445
SPOKANE 10, WASHINGTON

June 24, 1958

Mr. J. H. Gutride, Secretary
Federal Power Commission
Washington 25, D. C.

Dear Mr. Gutride:

On April 23 the Federal Power Commission forwar
a letter to Pacific Northwest Power Company requesti
certain additional information concerning the Middle Sna
River project for which Application for License was fi

by Pacific Northwest Power Company pursuant to its Preliminary Permit, Project No. 2173, and which you have identified by the serial number 2243.

In its application Pacific Northwest Power Company stated that it proposed to "prepare and present to the Commission appropriate information on alternative development of the same resources involved herein, including an examination of the relative costs and benefits of such developemnts, . . .".

In order that the Commission staff may be fully advised as to the nature and scope of the investigation that the Company is undertaking, we have set out a description of our program below. As the Commission is aware, the Corps of Engineers is currently preparing a Review Report of the Columbia River and its tributaries. The report of the Division Engineer is scheduled to be forwarded after July 1, 1958, and will be made available to the public at some later date. From public statements of spokesmen of the Corps, it is evident that some portions of this Report will bear importantly on our own investigation. As we note below, for this reason some phases of our study will not be completed until after the Review Report is made available to the public.

1. Geologic Examination

A preliminary geological Survey has already been made for the Company at all the sites of major structures and there is considerable geological information available from government agencies. From this information we are satisfied that we have adequate information as to the essential geological character of the sites. A more detailed survey will, nonetheless, be made to check the conclusions of the preliminary survey, and also to locate the holes that are to be drilled.

2. Drilling

Our drilling program is designed to develop information necessary for design (and cost estimates) of structures on a comparable basis. Our present

25294

geological information indicates that foundation conditions at all sites are adequate. The drilling program will, to the extent necessary, explore the extent and character of faults and determine depths to sound rock. We would plan a minimum number of holes required to provide a sound conclusion as to both engineering and costs. Unless further holes may be required as the results of drilling becomes available, no more than six holes will be drilled at any site.

3. Topographic Surveys

The Company has already completed aerial topographic surveys of all major sites. In our judgment, information otherwise available is satisfactory to determine reservoir contents. No ground surveys will be made. Location of axis will be made from aerial surveys and from results of drilling program. Final axis location might, therefore, shift slightly, but sufficient survey and drilling will be made to assure that any such shift will be within the limits of satisfactorily comparable cost estimates, and would not, therefore significantly affect the results.

4. Designs

Designs will be developed to the degree of refinement appropriate in view of the drilling, geological and topographical programs. Refinements of design at different sites will be carried to approximately the same stage, i.e., that for purposes of comparison an economical design has been chosen, and economies in design have been made. Be-

fore this work is completed, we will need to examine design and cost estimates of the Corps of Engineers, in the Review Report referred to above.

5. Power Output

Power potentials of alternative projects and alternative groups of projects are determined by water regulation studies of the Company. Power potentials of individual projects will be separately determined on the arbitrary assumption of identical dates of initiation of construction. Output of groups of projects, however, will be analyzed according to most probable scheduling of different developments within the group.

Water regulation studies will be carried forward through at least a fifty year license period. The other projects in the Columbia River system with which the projects are operated will reflect those used by the staff in the previous hearing. However, the selection of projects will need reflect the best available information and will not be finally determined until the Review Report already referred to is available.

Average Prime Energy, Dependable Capacity, Peaking Capability, and Average Annual Energy will be determined for all projects, at site and downstream, and with the various assumed groups of other projects.

Initial and ultimate installations at all projects will be determined on comparable criteria—substantially similar to criteria used in establishing installations at Mountain Sheep-Pleasant Valley.

25295

6. Storage

Storage usable for power, and proper drawdown of storage reservoirs will be determined in connection with the

water regulation studies referred to above. Storage usable for flood control may be established by the Review Report of the Corps of Engineers already referred to. If not, the Company will request the Corps to supply this information.

7. Benefits

To the extent a comparable analysis will require a determination of the economic benefits of alternate developments, the Company will calculate the power benefits in accordance with the "Green Book" principles, and will request the appropriate government agencies to supply information on non-power benefits.

8. Cost Estimates

The Company will prepare cost estimates for all principal structures on a comparable basis and in the approximate detail of staff estimates in Exhibits 154 to 160 in our recent hearing. Supplementary structures, such as China Gardens, common to all alternatives, will be estimated on a more summary basis, or estimates of government agencies, if suitable, will be used.

In view of this description of our program, our proposed arrangements to supply the information you request is as follows:

(a) *Exhibits H & I.* The Company is in a position to supply *pro forma* Exhibits H and I for initial operation (but using irrigation depletion figures as in Exhibit 67, rather than most recent CBIAC figures). We prefer, however, to await the determination of projects in the Columbia River system used for the complete water regulation studies, so that the material in the Exhibit will be consistent with this study. This cannot be done until after the Corps of Engineers releases its Review Report. Our studies will be completed after the information becomes available. This

will also control the submission of the "power study" to which your refer.

(b) *Market Study.* Again, we can supply you with tables of current load and resources of the four companies. Both the load and resource pictures have been changing rapidly in the last year, and we think it preferable that the material we supply the Commission be as current as possible (and as close as feasible to the time of Commission decision). We propose, therefore, to supply this information coincidentally with the design and cost estimates of alternative developments, which will be in any case the last study completed.

(c) *Transmission Study.* It is not necessary to duplicate the extensive A. C. Network Analyzer Study earlier made by the Company and already supplied to the Commission. Transmission requirements of alternative developments are roughly identical (as all alternatives have approximately identical power potential). Our transmission studies, therefore, will be limited to development of

cost estimates to establish economic feasibility. The changing pattern of loads and scheduling of resources may change the routing of certain lines. There may be some difference in transmission requirements resulting from different assumptions of dates of construction. Accordingly, we do not plan to complete our transmission studies until after our study of loads and resources has been firmed up, and the report would then be filed at approximately the same time.

(d) *Foundation Exploration.* The general character of our program for foundation exploration has been indicated above. We would expect to carry out a further drilling program prior to final design and construction. The pro-

gram now proposed will be completed in about two months from the date of initiation, and the whole program, including design as outlined herein, cost estimates, and comparative analysis would be completed in about six months. As to time of initiation, see our further comments below.

(e) *Cost Estimate.* I am enclosing herewith a preliminary cost estimate of High Mountain Sheep Development. You will understand that this does not constitute a filing of Exhibit N, but is a preliminary cost estimate provided to the Commission at its request for the information of the Commission. The more detailed information you request will be submitted on completion of the other studies referred to above.

The development of the Middle Snake River has been under study by various bodies and alternative possibilities are well known. Major General Emerson C. Itschner, Chief of Engineers, in testifying before the Senate Committee on Interior and Insular Affairs on April 22, 1958, set forth these alternatives. It is Pacific Northwest Power Company's intention to present to the Commission studies such as have been outlined in this letter on all of these alternatives that lie within the Commission's competence. This would not, of course, exclude further alternatives, if any should develop in the course of Pacific Northwest Power Company's study.

The Commission is aware that the status of Pacific Northwest Power Company's application for a license has been challenged before the Commission by counsel for the National Hells Canyon Association and the Northwest Public Power Association. The Commission will recognize that the program outlined will require substantial expenditure, in adidtion to the very heavy expenditures already made by the Company in this proceeding. In view of the nature of the uncertainty raised about our application the

ompany finds itself unable to proceed with the studies tlined in this letter until certain questions have been solved by the Commission. In order to obtain a resolun of these questions Pacific Northwest Power Company filing appropriate motions and petitions with the Comssion. As soon as the matter is determined by the Comssion we will advise you as to the time schedule on which will thereafter proceed.

Yours very truly,,

ROBERT D. YEOMANS
Robert D. Yeomans, *Secretary*

DY:rmh

: Mr. Lesher Wing

25298

BEFORE THE FEDERAL POWER COMMISSION

Project No. 2173/2243

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Petition for Declaratory Order

Comes now Pacific Northwest Power Company ("applint") and petitions the Commission for issuance of a eclaratory Order, pursuant to the provisions of Rule (c) of the Rules of Practice and Procedure of the Fedal Power Commission and of Section 4 of the Administrae Procedure Act (5 USCA 1004(d)) declaring the status der the provisions of Section 5 of the Federal Power Act 6 USCA 798) of that certain Application for License for e Middle Snake River Hydroelectric Project filed by ap-

plicant with the Commission on March 31, 1958; and as grounds of said petition applicant states as follows:

1. Applicant filed with the Commission, on March 31, 1958, an Application for License pursuant to the Federal Power Act for the Middle Snake River Hydroelectric Project, to which the Commission has, for identification purposes, assigned the number 2243.

2. The Commission had theretofore, on April 8, 1955, issued to the applicant a Preliminary Permit for the purpose of maintaining to the applicant priority of application for a license under the Federal Power Act, for a period of three years effective April 1, 1955. The conditions of such Permit have been complied with, and such Permit has not been cancelled by the Commission.

3. Under the Preliminary Permit, the applicant has carried out engineering and other investigations of development of the Middle Snake River. The Preliminary Permit described a proposed two dam development consisting of the Mountain Sheep dam and the Pleasant Valley dam, the two developing head to the tailwater of the licensed Hells Canyon project. The applicant made examinations and surveys and proposed plans, specifications and estimates for such development. Applicant filed Application for License for the Mountain Sheep-Pleasant Valley Project on September 7, 1955, which application was denied on January 20, 1958, by the Commission after hearing. The Mountain Sheep dam described in the Preliminary Permit would have been located at Snake River Mile 192.6. The Mountain Sheep dam as located in the Application for License filed by the applicant on September 7, 1955, was located at Snake River Mile 193.0. At the same time applicant was preparing such plans and specifications for said proposed

Mountain Sheep-Pleasant Valley Project applicant also investigated a structure of the approximate height of the one included in the pending application but located above the mouth of the Imnaha River, and applicant made examinations and surveys, and prepared plans, specifications and estimates for such development. This alternate High Mountain Sheep was rejected due to geological conditions. Structures below the mouth of the Imnaha River were not earlier investigated because, in the judgment of the applicant, fish passage devices had not been developed which would permit licensing of major structures obstructing runs of anadomous fish. The investigation of High Mountain Sheep Dam and the reason for lack of contemporary investigation at sites below the Imnaha are of record in the hearing held on Application for License for the Mountain Sheep-Pleasant Valley Project.

4. In an order, entered in the proceeding January 20, 1958

(Opinion No. 307), the Commission found that developments in mechanical methods of providing safe passage of migrating salmonoids downstream were such that consideration of a high structure on streams supporting major runs of anadomous fish was not precluded. Accordingly, it became possible for the applicant to extend its investigations and surveys, under its Preliminary Permit, to developments below the mouth of the Imnaha River.

5. The license application, now pending in this proceeding, was filed on March 31, 1958, within the effective period of the Preliminary Permit and pursuant thereto. The applicant has been informally advised that the number assigned to the Application, namely 2243, is for identification purposes only, and that there is no significance in the fact

that the number 2173 was not continued. The Mountain Sheep development, referred to in the license application, would be located approximately at Snake River Mile 189.4, Nez Perce, the development found by the Commission to be superior to the Mountain Sheep-Pleasant Valley combination, approximately at Snake River Mile 186.1, being respectively 3.3 miles and 6.5 miles downstream of the axis of the Mountain Sheep dam described in the Preliminary Permit.

6. According to the terms of said application, applicant undertook the obligation to "prepare and present to the Commission appropriate information on alternative developments of the same resources involved herein, including an examination of the relative costs and benefits of such developments, so that the Commission may determine what project or combination of projects is, in view of all costs and benefits derived therefrom, best adapted to a comprehensive development of the resources involved."

7. The investigations and other work required to develop the information listed above, is expected to require a substantial expenditure by

the applicant. Should the matter require hearing, the expense to the applicant at such hearing would be expected to be heavy.

8. On April 18, 1958, counsel for National Hells Canyon Association and Northwest Public Power Association filed a Motion to Dismiss Application in these proceedings, alleging, inter alia, in a memorandum attached to said Motion, that the Preliminary Permit did not survive the filing of the Application for License for Mountain Sheep-Pleasant Valley, and that our application of March 31 was an improper attempt to "freeze out" bodies entitled to preference under

Section 7(a) of the Federal Power Act. Members of Northwest Public Power Association would appear to be organizations of the character described in Section 7(a) of the Federal Power Act.

9. By this argument counsel for Northwest Public Power Association asserts that at the last moment, after applicant had undertaken considerable expense and had proved its case, a body entitled to preference under Section 7(a) might enter and demand issuance of license to it.

10. Applicant's expenditure already incurred in carrying out studies and investigations to develop plans meeting the statutory standard exceeds $2,500,000. Further expenditures of substantial magnitude will be required to bring the pending Application to determination. It is necessary and desirable that the uncertainty concerning the status of the pending Application be removed, so that applicant may proceed with expenditures with the protection afforded by the Federal Power Act.

WHEREFORE, for the foregoing reasons, and based upon the facts heretofore set forth, the applicant, pursuant to Section 1.7(c) of the Rules of Practice and Procedure of the Commission, and Section 4(c) of the Administrative

Procedure Act (5 USCA 1004(c)) Petitions the Commission to issue orders in appropriate form, declaring that the Preliminary Permit issued on April 8, 1955, to the Pacific Northwest Power Company and identified by the Commission as Project No. 2173 continued in force and effect in accordance with its terms for the term set forth therein, namely three years from April 1, 1955; and that the Application for License for the Middle Snake River Project, filed by the applicant on March 31, 1958, and identified by the Commission as Project No. 2243, was filed in accordance

with such Preliminary Permit; and that such Preliminary Permit maintained in accordance with Section 5 of the Federal Power Act (16 USCA 798) priority of application to the applicant for the license filed herein, namely for the Middle Snake River Project No. 2243.

Respectfully submitted,

PACIFIC NORTHWEST POWER COMPANY
By PAUL B. McKEE

SEAL

Attest:

CLARENCE O. PHILLIPS
Asst. Secretary

SMITH, GRAY, HILL & RODGERS
Counsel for Applicant

STATE OF OREGON }
COUNTY OF MULTNOMAH } ss.

Paul B. McKee, being first duly sworn, deposes and says: That he is the Vice President of Pacific Northwest Power Company, the applicant; that he has read the foregoing Petition for Declaratory Order and knows the contents thereof; that the same are true to the best of his knowledge and belief.

PAUL B. McKEE

Subscribed and sworn to before me this 24th day of June, 1958.

DOROTHY THAIN
Notary Public for Oregon

My commission expires: Dec. 20, 1960

SEAL

25320

[Docketed Feb. 27, 1959]

BEFORE THE FEDERAL POWER COMMISSION

Amendment of Application for License

Project No. 2173/2243

Application for License for the Middle Snake River Project in the Middle Snake River in the States of Idaho and Oregon, by Pacific Northwest Power Company

Application for license for the above entitled project filed with the Commission by Pacific Northwest Power Company ("Applicant") is hereby amended in the following respects:

1. Paragraph 1 of said application is amended by deleting the phrase "comprising such project works" appearing in the seventh line of said paragraph 1 and inserting in lieu thereof the phrase "comprising the project works as more fully described hereinafter", so that said paragraph 1 shall read as follows:

• • • • • • • • • •

25321

2. Paragraph 6 of said application shall be amended to read as follows:

"6. The applicant proposes to construct, as its Middle Snake River Project, the High Mountain Sheep development. This dam, more specifically described in paragraph 7, developing head to elevation 1490, will be located on the Snake River immediately upstream of the confluence of the Salmon River. A companion dam (which is not included in this Application for License), the Lower Canyon development, would be located on the Salmon River immediately above its confluence with the Snake, development head to elevation 1575. The

two dams would provide a maximum of 5,700,000 acre feet of useable storage and in excess of 2,565,000 kilowatts of ultimate capability. Development of substantially the same resources could also be obtained with a single dam, the Nez Perce development, located on the Snake River immediately downstream from the confluence of the Snake and

Salmon rivers. This dam would be a concrete gravity dam, approximately 700 feet high, normal pool elevation 1490, with two powerhouses on each side of the river, initial installation of eight units of 1,200,000 kilowatts rated capacity, and ultimate installation of seventeen units of 2,500,000 kilowatts rated capacity. Nez Perce development would provide lesser resource development than High Mountain Sheep and Lower Canyon. Depending upon field experience with experimental fish handling devices, the resources of the Salmon River might, alternately, be developed by diverting portions of Salmon River flows in excess of necessary minimum flow into the High Mountain Sheep reservoir. Applicant does not include the Lower Canyon development nor the Salmon River diversion in its application for license for the Middle Snake River Project."

3. Paragraph 7 of said application is amended to change the initial installation from 7 to 5 units in the following respects:

(a) The word "seven" in the sixth line is amended to read "five", and the word and number "seven (7)" in the eighth line are amended to read "five (5)".

(b) The figure "1,155,000" in the eighth line is amended to read "825,000", and the figure "1,330,000"

in the ninth line is amended to read "950,000", and the figure "35,000" in the same line is amended to read "25,000".

(c) In paragraph 7(a) there is inserted in the tenth line after the word "spillway" a comma and the word "valves", and in the eleventh line of the same paragraph the word "six" is changed to "four" and the

25323

word "seven" is changed to "five", and in the twelfth line of the same paragraph the figure "30,000" is changed to the figure "20,000", and in the thirteenth line the figure "1495" is changed to the figure "1497". In the fifth line on page 6 the words and numbers "Seven 8'6" are deleted and the word "conduits" is changed to "Conduits".

• • • • • • • • • • •

25324

4. Paragraph 10 is amended in the sixth line by changing the word "four" to the word "three" and by changing the word "three" to the word "two". In the seventh line the word "right" is changed to the word "left", the period at the end of the sentence is changed to a comma, and the following phrase is added:

"and a third and fourth unit in the right bank",

so that said paragraph 10 as amended will read as follows:

"10. The proposed scheme of development of the Middle Snake Project is as follows:

"The powerhouses of the High Mountain Sheep Development are

25325

to be reinforced concrete structures located on each side of the river immediately downstream of the con-

crete arch dam. Provision is to be made for the initial installation of three units on the left bank and two units on the right bank with provisions for the future addition of a fourth unit on the left bank, and a third and fourth unit on the right bank. Each unit is rated at 270,000 hp (full gate opening) under a maximum net head of 540 feet."

5. Exhibit L, Sheet 1 through 29, inclusive, are cancelled.

6. On Exhibit L, Sheet 30, the table appearing in the middle right of said sheet shall read as follows:

"Spillway, 4 gates 50' x 40' with reservoir at El. 1497	226,000 cfs.
Thru machines (4 units)	20,000 cfs
Thru 7 hollow jet valves	54,000 cfs
	300,000 cfs"

7. On Exhibit L, Sheets 30, 32 and 33, references to units 4 and 7 shall be understood to be reference to future installation.

8. There are filed herewith the following amended exhibits:

Exhibit E—Water Rights

Exhibit M—General Description and Specifications of Equipment

Exhibit O—Construction Schedule.

9. There are filed herewith the following additional exhibits not filed with the application:

Exhibit B-1—Resolution of Board of Directors authorizing filing of amendment.

25326

Exhibit D—Compliance with Requirements of State Law

Exhibit N—Estimate of Cost.

IN WITNESS WHEREOF, the Applicant has caused its name to be hereunto signed by K. M. Robinson, its Chairman of the Board, and its corporate seal to be hereunto affixed by Robert D. Yeomans, Secretary, thereunto duly authorized, this 25th day of February, 1959.

PACIFIC NORTHWEST POWER COMPANY

By K. M. ROBINSON
K. M. Robinson
Chairman of the Board

Attest:

ROBERT D. YEOMANS
Secretary

25334-1

May 6, 1959

Project No. 2243

PACIFIC NORTHWEST POWER COMPANY

Robert D. Yeomans, Secretary
Pacific Northwest Power Company
P. O. Drawer 1445
Spokane 10, Washington

Dear Mr. Yeomans:

Reference is made to the Commission's letter of April 23, 1958, and to your reply thereto dated June 24, 1958, per-

taining to the application for license for the Middle Snake project No. 2243. Reference is also made to your amendment of application for license filed on February 27, 1959.

It is requested at this time that you submit your current plans for furnishing data asked for in the Commission's letter. In view of the supplemental filing, submission of Exhibits H and I should be made at an early date in order to complete your application for license, as amended.

Very truly yours,

J. H. GUTRIDE
Secretary

PWR
AGS:mph
5/1/59
cc: SFRO
OGC
DLP

25338

[Received Sept. 28, 1959]

BEFORE THE
FEDERAL POWER COMMISSION

Application for License for the Middle Snake River Project in the Middle Snake River in the States of Idaho and Oregon, by Pacific Northwest Power Company

Second Amendment of Application for License

Project No. 2173/2243

Application for license for the above entitled project heretofore filed with the Commission by Pacific Northwest Power Company (applicant) as previously amended under date of February 25, 1959 (1st Amendment) is hereby further amended in the following respects:

1. Paragraph 6 of said application, as amended, is further amended in the following respects (references are to paragraph 6, as it appears on pages 2 and 3, 1st Amendment):

(a) The number "1490" in line 4, page 2, is changed to number "1510".

(b) The number "5,700,000" in line 9, page 2, is changed to "5,600,000".

(c) The number "2,565,000" in line 10, page 2, is changed to "3,300,000".

(d) There is added to paragraph 6 of said application the following additional unnumbered paragraph:

"The applicant will construct, maintain and operate such fish ladders, fish traps or other fish passage, fish handling or fish protective devices and provide

fish hatchery facilities for the purpose of conserving the resident and migrant fishery resources, together with such modifications in the project structures as may be required thereby, and will operate the project with reasonable regard for the interest of fish life."

2. Paragraph 7 of said application as amended is further amended in the following respects (references are to paragraph 7, page 4, 1st Amendment):

(a) The number "1490" in line 6 is changed to "1510".

(b) The number "575" in line 7 is changed to "585".

(c) The number "825,000" in line 9 is changed to "875,000".

(d) The number "950,000" in line 9 is changed t "1,000,000".

(e) The word and number "eight (8)" in line 1 is changed to "ten (10)".

(f) The number "1,320,000" in line 11 is changed t "1,750,000" and the number "1,520,000 " is change to "2,000,000".

(g) The number "40,000" in line 12 is changed t "50,000".

3. Paragraph 7(a) of said application as amended i amended in the following respects (references are to para graph 7(a) as it appears on pages 4 and 5, 1st Amendment)

(a) The number "670" in line 5 of page 4 is change to "690".

(b) The number "1500" in the 6th line of page is changed to "1520".

(c) The number "1450" in the first line of page is changed to "1470".

(d) That part of the sentence beginning "The entir spillway" and ending "20,000 cfs)", commencing i the second line of page 5, is deleted and there is inserte instead: "The spillway and valves".

(e) The figure "1497" in the sixth line is change to "1517.5".

(f) The number "16,300" in line 9 of page 5 i changed to "17,200".

(g) The number "3,250,000" in line 10, page 5, i changed to "3,600,000".

(h) The number "2,700,000" in line 11, page 5, is changed to "3,100,000".

(i) The number "1,570,000" in line 12, page 5, is changed to "1,800,000" and the number "120" is changed to "128".

(j) There is added the following sentence at the end of paragraph 7(a): "Discharge capacity of the conduits plus turbines assumed operating (initial installation 18,000 cfs., ultimate installation 25,000 cfs.) at minimum flood control elevation will be 65,000 cfs."

4. Paragraph 7(b) of said application as amended is amended in the following respects (references are to page 6 of said application):

25341

(a) The word "seven" appearing in the third line is amended to read "five" and the word "eight" in the same line is deleted and the words "sixth to tenth" are inserted.

5. Paragraph 7(c) of said application is amended in the following respects (references are to page 6 of the application):

(a) The word "four" in the third line is changed to "three", the word "three" in the fourth line is changed to "two", there is deleted from the sixth line the phrase "a fourth unit on the Idaho side" and inserted in lieu thereof "two additional units on the Oregon side and three on the Idaho side."

6. Paragraph 10 of said application, as amended, is further amended in the following respects (references are to the first paragraph of paragraph 10 as it appears on page 6 of said amendment):

(a) The word "the" at the end of the fourth line is changed to "two", the word "addition" in the fifth line is changed to "additional", the phrase "of a fourth" is deleted in the fifth line, the word "unit" is changed to the word "units" in the same line, the words "a third and fourth" in the fifth and sixth lines are changed to read "three additional", the word "unit" in the sixth line is changed to read "units", the figure "270,000" in the sixth line is

changed to "285,000", and the figure "540" in the seventh line is changed to "550".

7. Paragraph 11(a) is amended to read as follows:

"The project is designed for operation in coordination with the Northwest Power Pool, and will be so operated by the applicant to the extent practicable in view of recognition of benefits to other Pool members resulting from such coordinated operation of the project. The applicant will design its interconnected primary transmission system accordingly, and so as to provide for delivery of power generated at the project to the systems of the organizing companies for distribution residential, farm, commercial, industrial, municipal and public utility customers."

8. There are filed herewith the following amended exhibits:

Exhibit F—Statement Pertaining to Project Lands, amended page 1 and 1A, additional page 9.

Exhibit K—Detailed Maps of Project Area, page 1 (amended).

Exhibit L—General Design Drawings, Sheets 30 through 36 (amended).

Exhibit M—General Description and Specifications of Equipment (amended).

Exhibit O—Construction Schedule (amended).

25343

8. There are filed herewith the following additional exhibits not filed with the application:

Exhibit B-2—Resolution of Board of Directors

Exhibit H—Stream Flow Utilization

Exhibit I—Loads and Resources and Related Operational Characteristics.

9. There is set forth, on the pages following, the text of the application as amended by the first and second Amendments, paragraph 13 designating the filing with which currently applicable exhibits was made.

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25351

13. Exhibits filed herein were filed, as designated below, with

25352

the Application for Preliminary Permit ("PP"), the Application for License for Mountain Sheep-Pleasant Valley ("MS-PV Lic"), the Application for License for Middle Snake River Project ("Hi Mt. Sheep Lic"), the First Amendment thereto ("1st Amend.") or the Second Amendment thereto ("2nd Amend.").

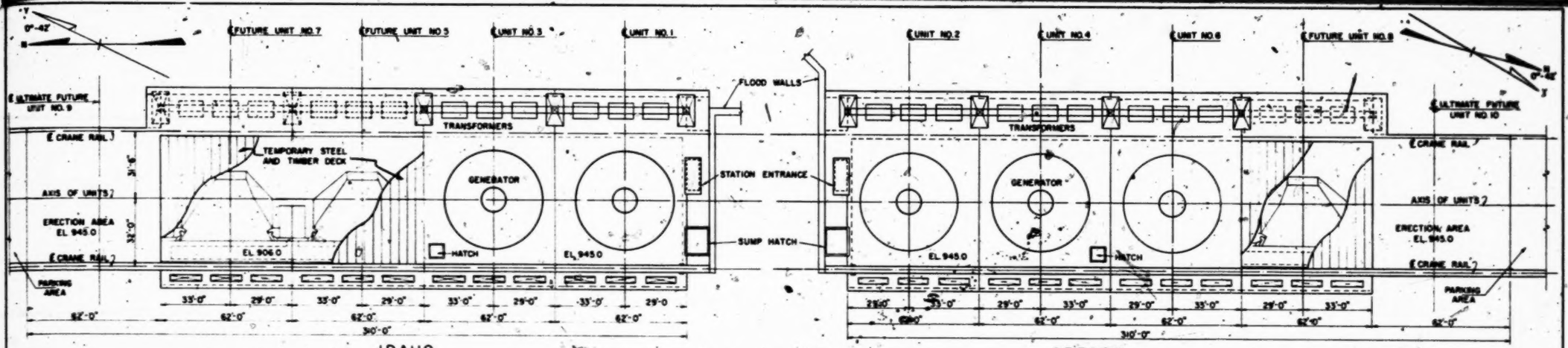
Exhibit A-1	Articles of Incorporation	"PP" Exhibit A-(b)
Exhibit A-2	By-Laws, as amended to date	Hi Mt. Sheep Lic.
Exhibit A-3	Certificate of Organization	Hi Mt. Sheep Lic.
Exhibit A-4	Certificate of Good Standing—Oregon	Hi Mt. Sheep Lic.

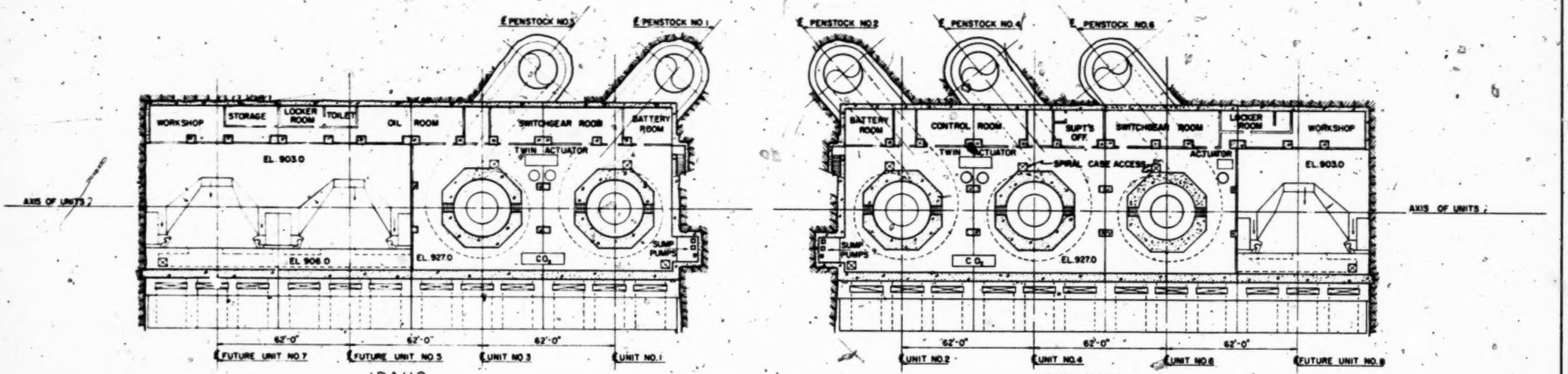
(25352)

Exhibit A-5	Certificate of Good Standing—Idaho	Hi Mt. Sheep Lic.
Exhibit A-6	Certificate of Good Standing—Washington	Hi Mt. Sheep Lic.
Exhibit A-7	Certificate of Good Standing—Montana	Hi Mt. Sheep Lic.
Exhibit B	Certified Copy of Resolution of Board of Directors authorizing filing of Amended Application	Hi Mt. Sheep Lic.
Exhibit B-1	Certified copy of Resolution of Board of Directors authorizing filing of Amended Application	1st Amend.
Exhibit B-2	Certified copy of Resolution of Board of Directors authorizing filing of Amended Application	2nd Amend.
Exhibit C	Special Laws Applicable to Project	M.S.-P.V. Lic.
Exhibit D	Compliance with Requirements of State Laws	1st Amend.
Exhibit E	Water Rights	1st Amend.

25353

Exhibit F	Statement Pertaining to Project Lands	2nd Amend.
	Page 1	M.S.-P.V. Lic.
	Pages 2-8	2nd Amend.
	Page 9	
Exhibit G	Financial Statement	M.S.-P.V. Lic.
Exhibit H	Stream Flow Utilization	2nd Amend.
Exhibit I	Loads and Resources and Related Operational Characteristics	2nd Amend.
Exhibit J	General Map of Project Area	Hi Mt. Sheep Lic.
Exhibit K	Detailed Map of Project Area	
	Page 1	2nd Amend.
	Sheets 1 to 87	M.S.-P.V. Lic.
	Sheets A-1 through A-19 (except A-4)	Hi Mt. Sheep Lic.
	Sheet A-4	2nd Amend.
Exhibit L	General Design Drawings	
	Sheets 1 through 29	Withdrawn (1st Amend.)
	Sheets 30 through 36	2nd Amend.
	Sheets 37 and 38	Hi Mt. Sheep Lic.
Exhibit M	General Description and Specifications of Equipment	2nd Amend.
Exhibit N	Estimate of Cost	2nd Amend.
Exhibit O	Construction Schedule	2nd Amend.





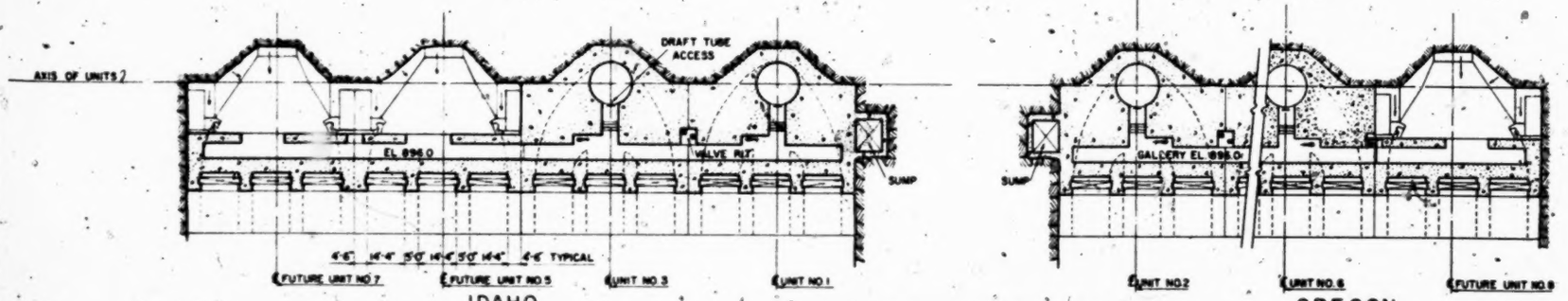


EXHIBIT L

SHEET 32 AMENDED

PROJECT Nº2173/2243 IDAHO-OREGON

HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT

POWER HOUSE PLANS

SCALE 1"=20'-0"

PACIFIC NORTHWEST POWER COMPANY

SPOKANE, WASH. PORTLAND, ORE.

September 1959

G-163907

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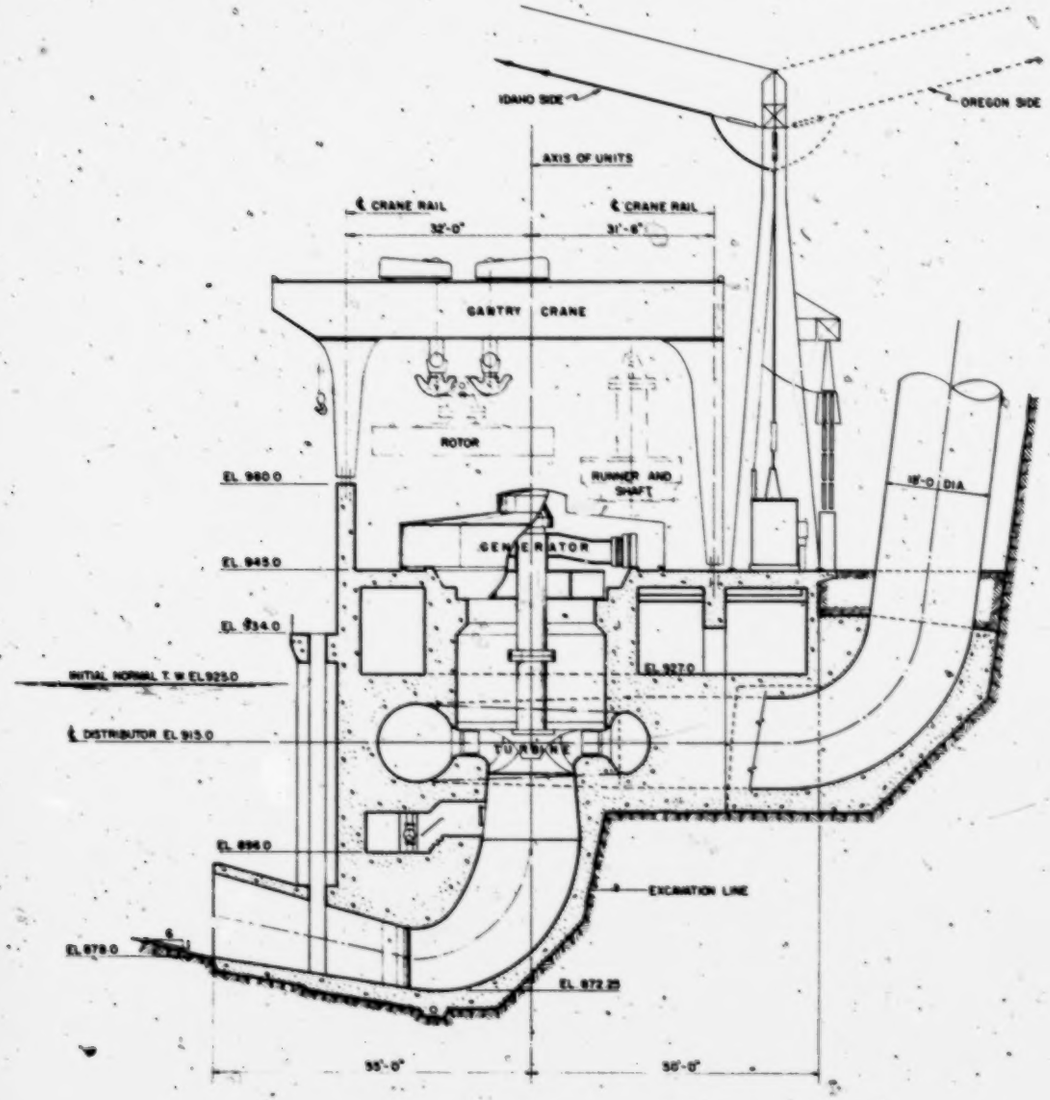
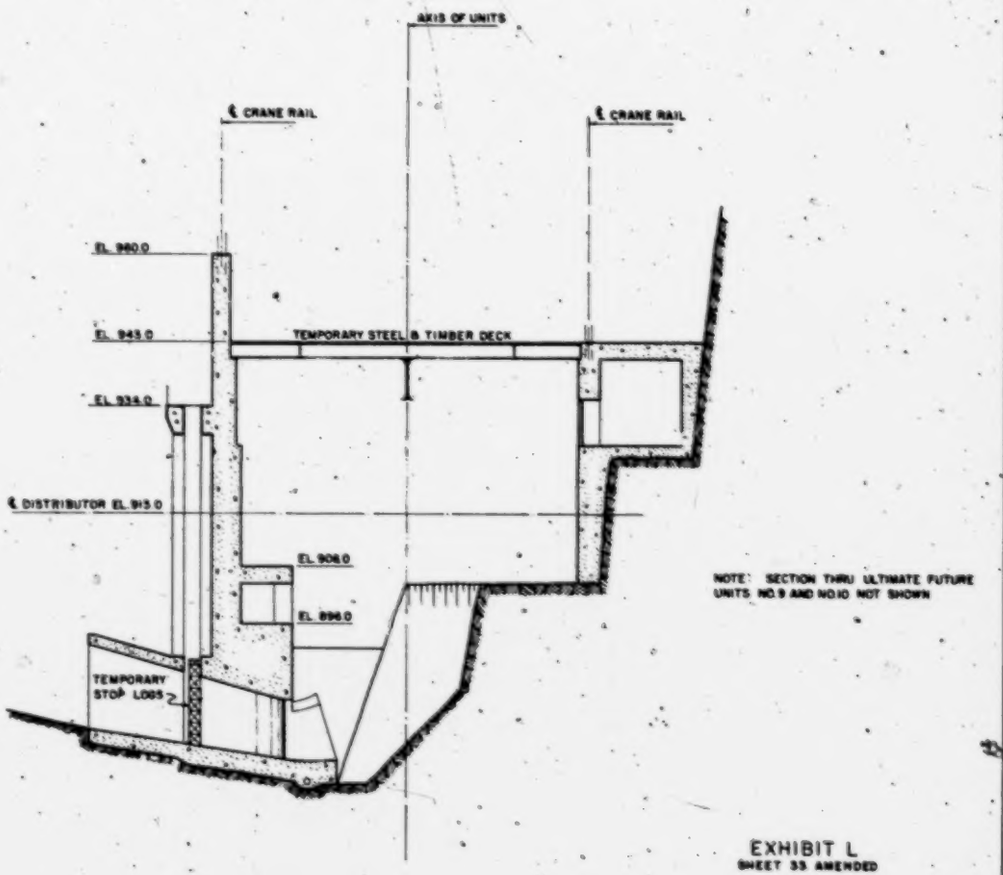


CROSS SECTION THRU POWER HOUSE UNITS 1,2,3,4&6



NOTE: SECTION THRU ULTIMATE FUTURE UNITS NO.9 AND NO.10 NOT SHOWN

CROSS SECTION THRU POWER HOUSE FUTURE UNITS 5,7&8

EXHIBIT L
SHEET 33 AMENDED

10 0 10 20 30 40 50
SCALE 1"=10'

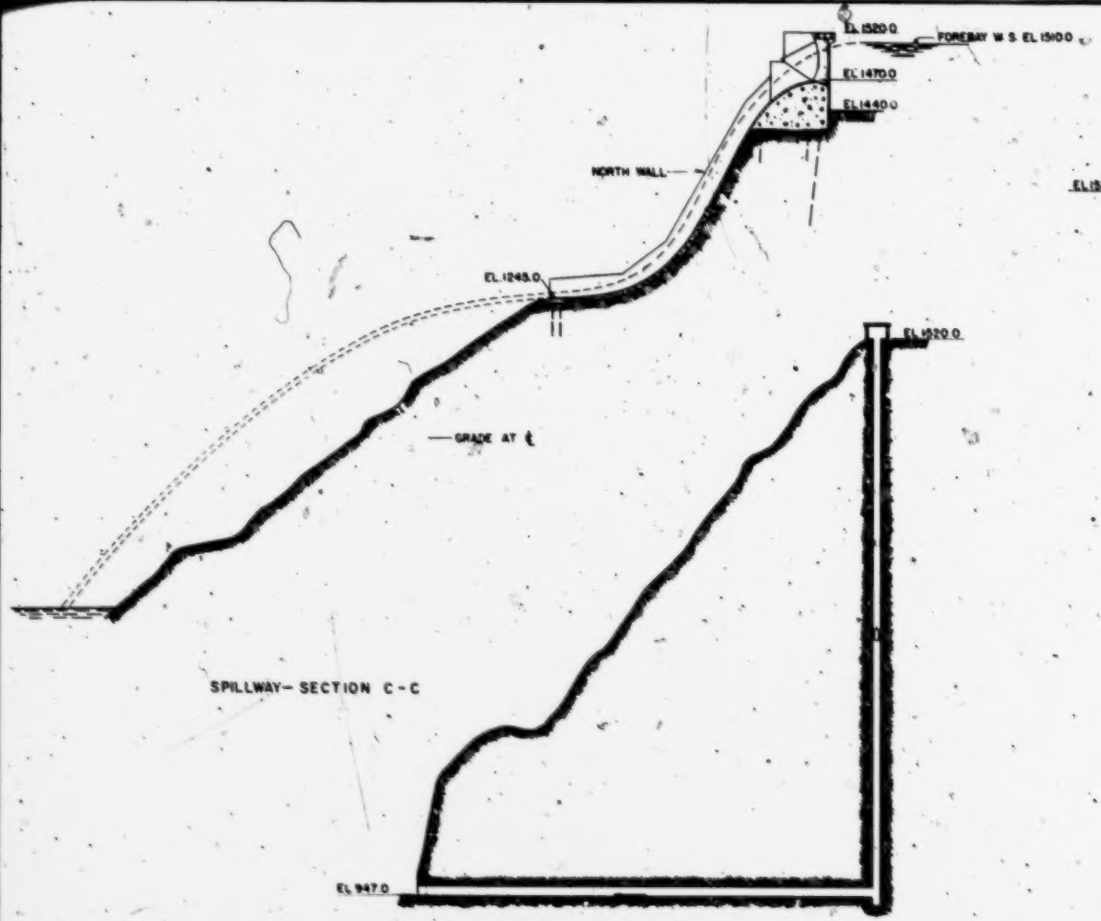
EQUIPMENT

TURBINE: FIVE-265,000 H.P. AT 350 FT. NET HEAD, FULL GATE, 150 R.P.M.
GENERATOR: FIVE-175,000 K.W., 0.95 P.F., 3-PHASE, 60-CYCLE, MAXIMUM CAPABILITY 200,000 K.W.
MAIN TRANSFORMER: SIX SINGLE PHASE, 60-CYCLE, 13.8-345 K.V. 70,000 K.V.A., PLUS ONE SPARE
NINE SINGLE PHASE, 60-CYCLE, 13.8-230 K.V. 70,000 K.V.A., PLUS ONE SPARE
INTAKE GATES: FIXED WHEEL TYPE, 21 FT. WIDE BY 21 FT. HIGH, ONE FOR EACH PENSTOCK
DRAFT TUBE GATE: TWO SETS OF 3 GATES EACH, SLIDE TYPE, 16 FT. WIDE BY 13 FT. HIGH
MAIN GANTRY CRANE: ONE FOR EACH POWER HOUSE, 700/25 TON CAPACITY
INTAKE GATE HOIST: ONE FOR EACH GATE, 300 TON CAPACITY

PROJECT № 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
POWER HOUSE CROSS SECTIONS
SCALE 1"=10'
PACIFIC NORTWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

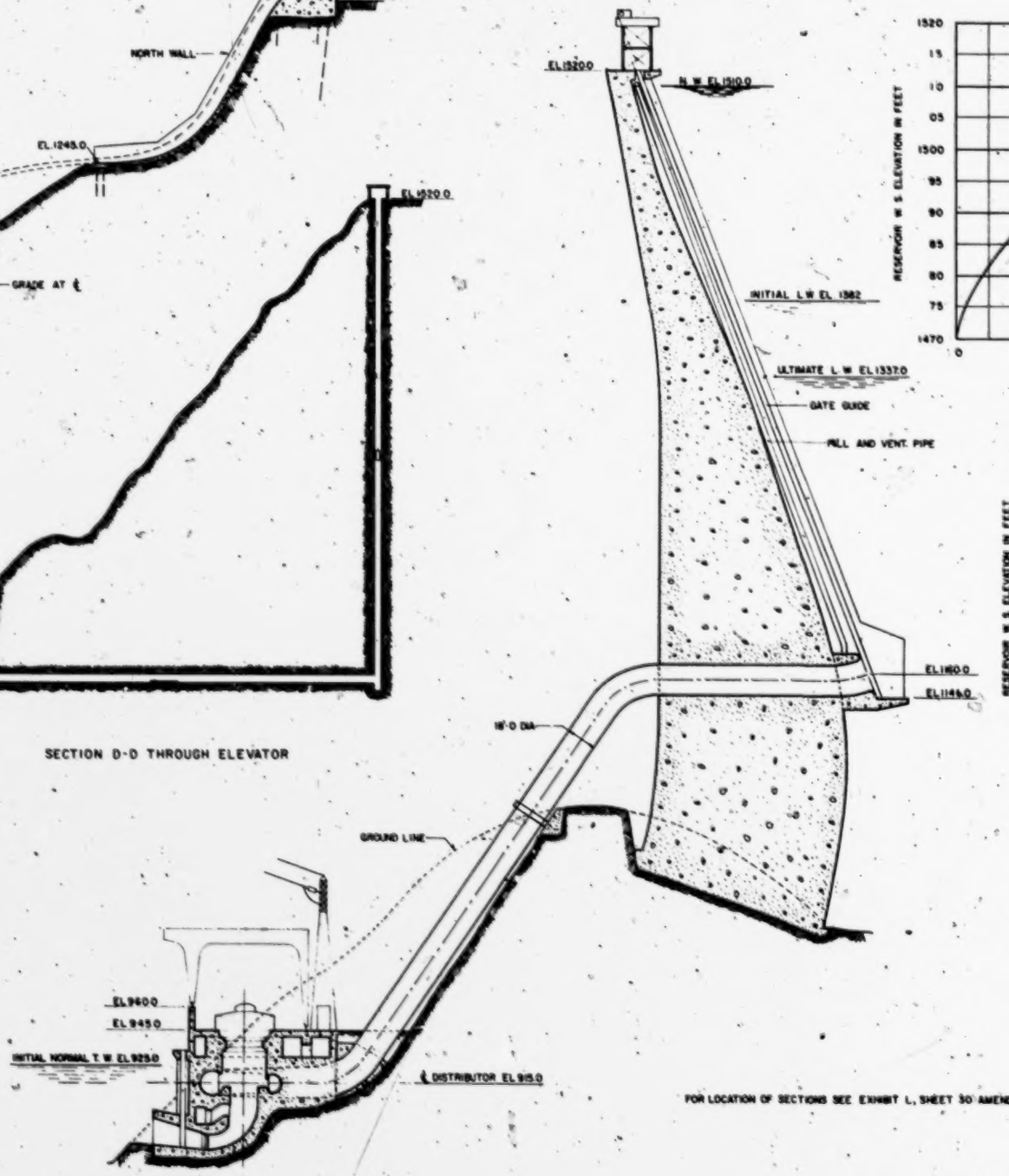
September 1939

D-163908

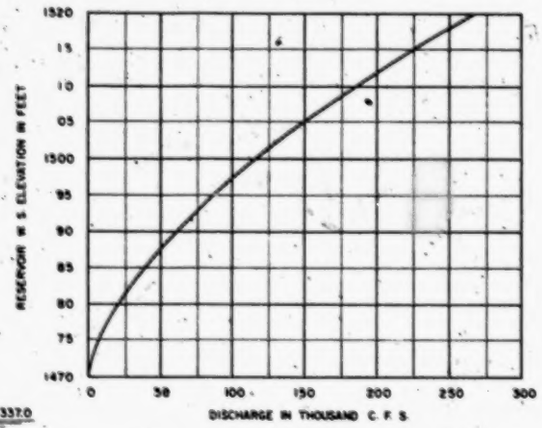


SPILLWAY- SECTION C-C

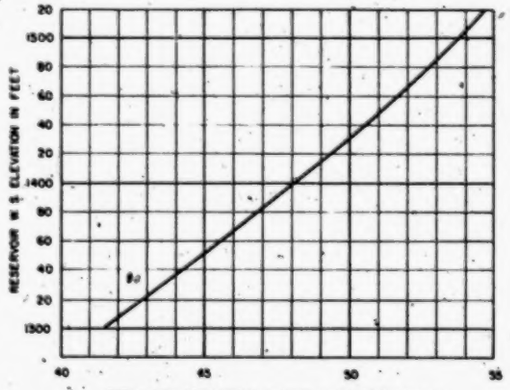
SECTION D-D THROUGH ELEVATOR



SECTION A-A
SCALE 1"=30'



SPILLWAY DISCHARGE CURVE



SLUICE RATING CURVE

FOR LOCATION OF SECTIONS SEE EXHIBIT L, SHEET 30 AMENDED

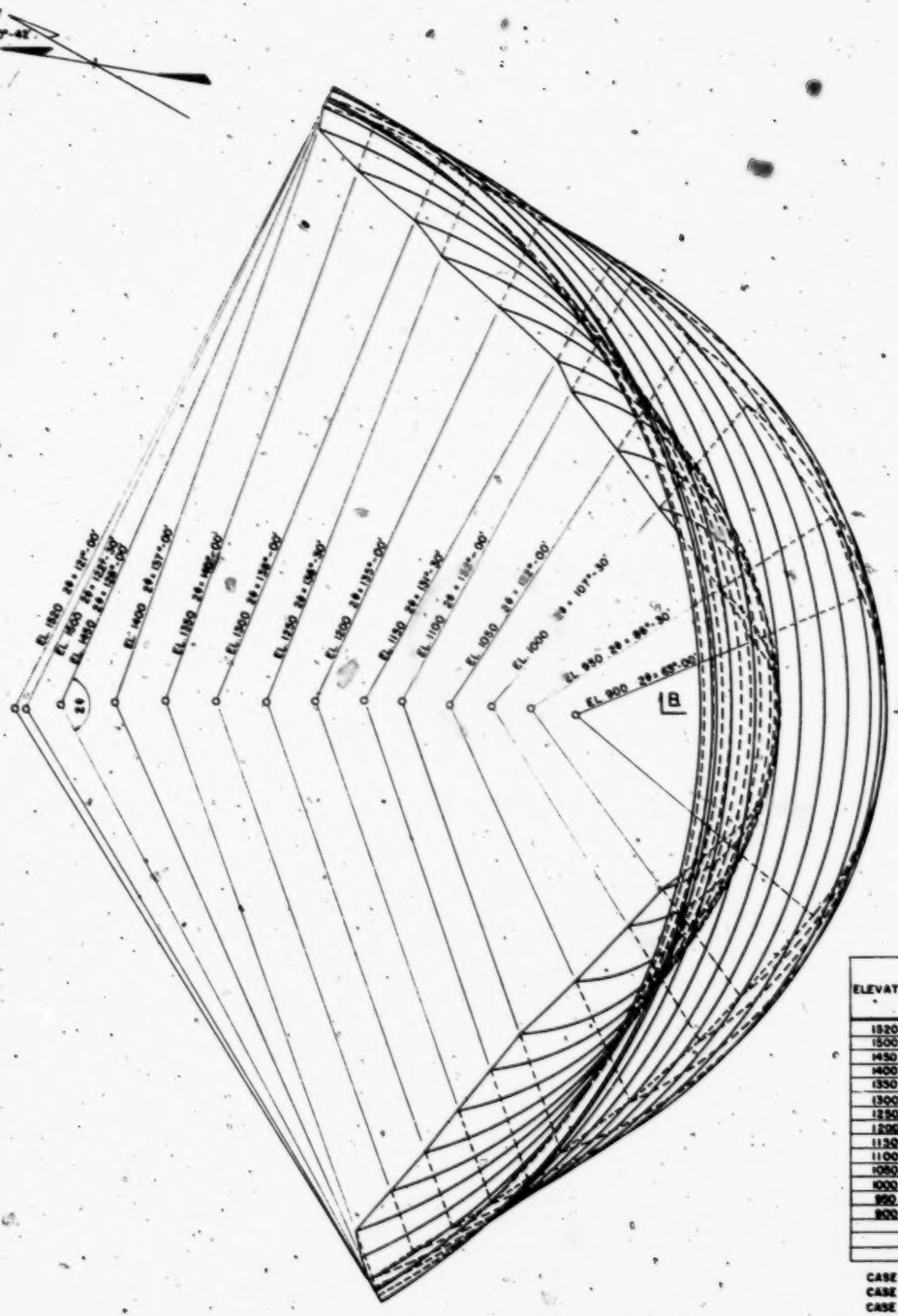
EXHIBIT L
SHEET 34 AMENDED

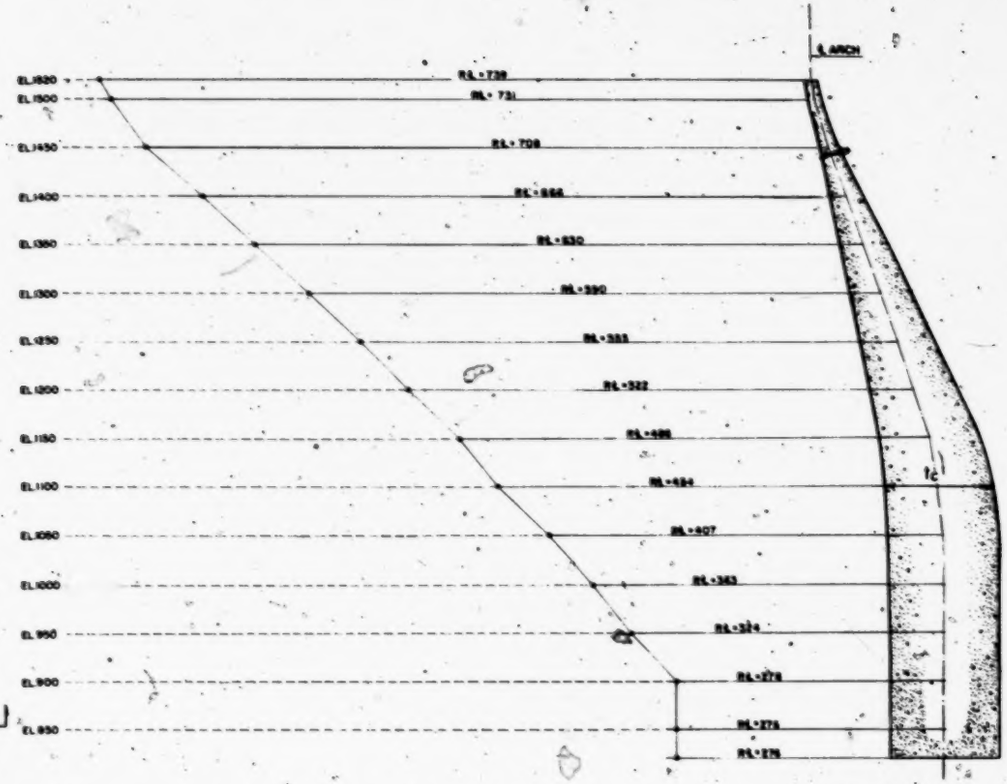
60' 0' 60' 120' 180' 240' 300'
SCALE 1"=60'

PROJECT Nº2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H. E. DEVELOPMENT
INTAKE AND SPILLWAY SECTIONS
SCALE 1"=60' UNLESS NOTED
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

September, 1959

G-163909



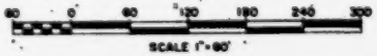


SECTION B-B

ELEVATION	ARCH DIMENSIONS						ARCH STRESSES (LBS./SQ. IN.)											
							CASE I				CASE II				CASE III			
	t_c FT.	ABUT. FLARE INT.	t_a FT.	2θ DEGREES	R_E FT.	$\frac{t_c}{R_E}$	CROWN EXT.	CROWN INT.	ABUT. EXT.	ABUT. INT.	CROWN EXT.	CROWN INT.	ABUT. EXT.	ABUT. INT.	CROWN EXT.	CROWN INT.	ABUT. EXT.	ABUT. INT.
1520	14	0	14	121	739													
1500	14	0	14	122.5	731													
1450	20	0.5	20.5	129	708	0.028	1010	898	988	1010	1148	998	1012	1167	1268	1082	1068	1276
1400	38	1.5	38.5	137	666	0.053	1000	838	787	1000	1075	878	912	1098	1234	1003	934	1149
1350	50	3	53	140	630	0.080	1010	798	703	1000	1072	787	885	1081	1240	912	912	1239
1300	64	5.5	69.5	139	590	0.109	1020	695	640	1005	1071	688	830	1071	1236	814	733	1235
1250	79	8	84	138.5	555	0.141	1015	624	574	1015	1068	630	782	1088	1231	728	648	1240
1200	92	12.5	104.5	136	522	0.176	1015	523	518	1000	1059	515	698	1035	1212	596	563	1210
1150	106	17	123	131.5	498	0.218	990	420	437	995	1028	404	589	1046	1172	464	463	1198
1100	113	21	134	132	484	0.250	1000	368	448	980	1045	353	573	1008	1179	414	438	1188
1050	118	27	145	132	407	0.290	1015	363	380	1000	1048	258	538	1078	1178	368	388	1191
1000	114	30	144	107.5	363	0.314	1020	62	283	1000	1052	44	252	1064	1198	53	282	1178
950	113	28	141	89.5	324	0.350	900	-135	15	980	919	-171	0	1083	1010	-189	7	1178
900	113	12	125	63	278	0.440												

CASE I WATER LOAD, RES. AT 1510
CASE II WATER LOAD, RES. AT 1517.7, PLUS TEMPERATURE STRESSES
CASE III WATER LOAD, RES. AT 1510, PLUS TEMPERATURE STRESSES PLUS EARTHQUAKE STRESSES

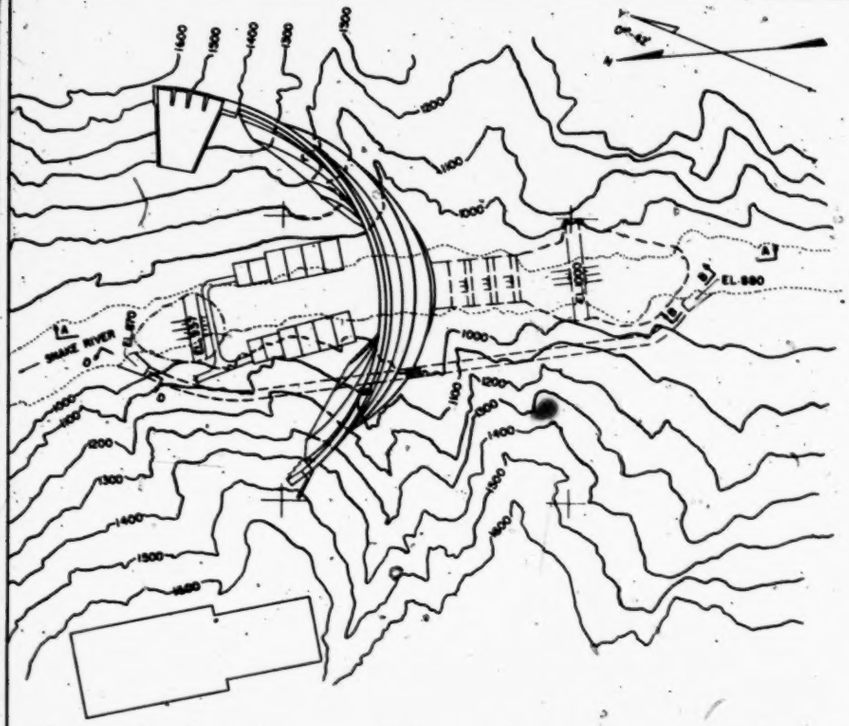
EXHIBIT L
SHEET 35 AMENDED



PROJECT Nº2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
ARCH DAM
SCALE 1"=60'
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

September 1959

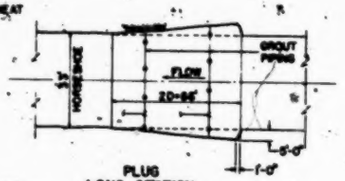
G-163910



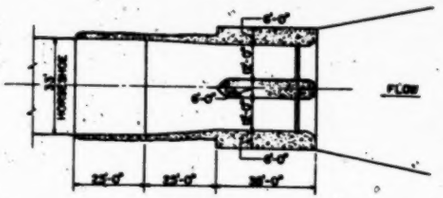
PLAN

SCALE: 1" = 200'

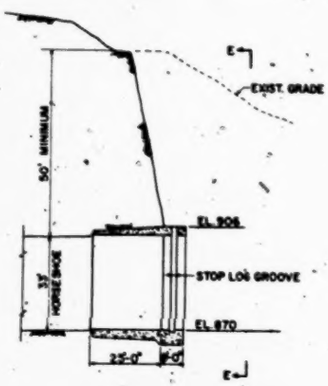
TYPICAL SECTION
THROUGH DIVERSION TUNNEL



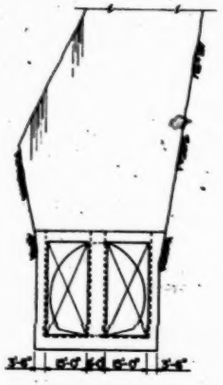
PLUG
LONG. SECTION



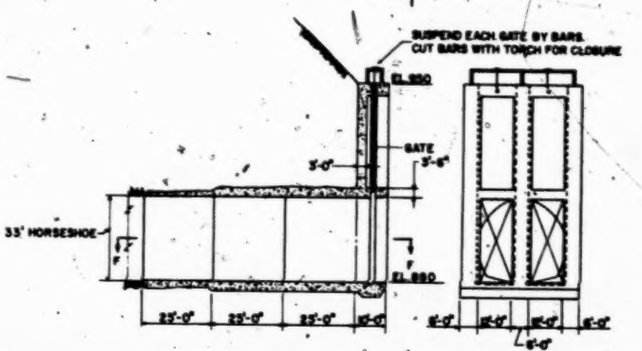
SECTION F-F



SECTION D-D



SECTION E-E



SECTION B-B

SECTION C-C

SCALE: 1" = 20'

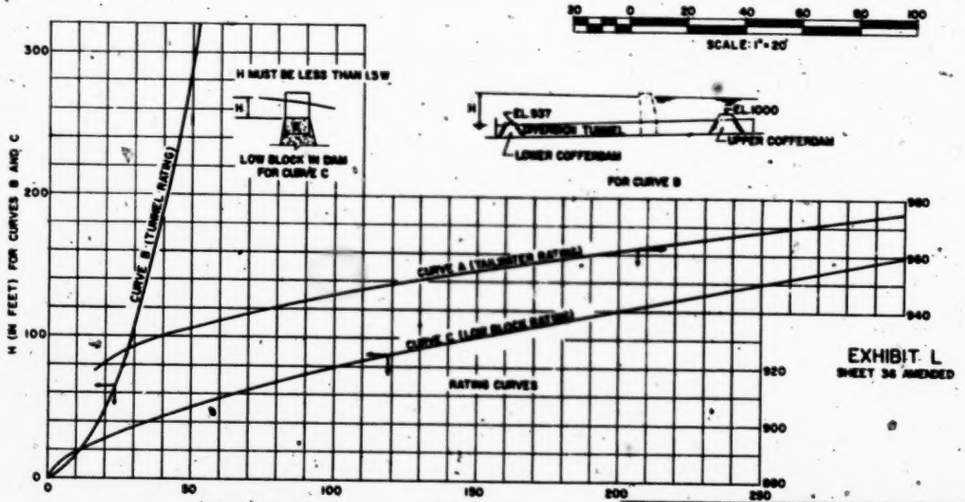
USE OF RATING CURVES

CASE A
ALL FLOW THROUGH DIVERSION TUNNEL

I WITHOUT OVERTOPPING UPSTREAM COFFERDAM.
EXAMPLE:
ASSUME FLOW IN RIVER TO BE 25,000 CFS.
CURVE A - TAILWATER ELEV. = 923.5
CURVE B - HEAD ON DIVERSION TUNNEL = 73.5'
HEADWATER ELEV. = 923.5 + 73.5 = 997

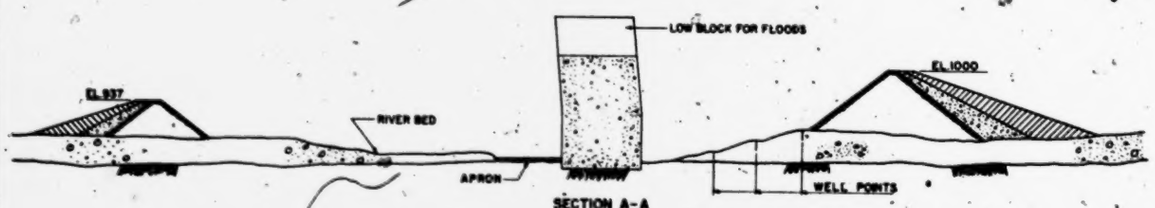
II OVERTOPPING UPSTREAM COFFERDAM.
EXAMPLE:
ASSUME FLOW IN RIVER TO BE 40,000 CFS.
CURVE A - TAILWATER ELEV. = 930
CURVE B - HEAD ON DIVERSION TUNNEL = 186'
HEADWATER ELEV. = 930 + 186 = 1116

CASE B
FLOW THROUGH DIVERSION TUNNEL AND OVER LOW BLOCK OF DAM (SILL ELEVATION OF LOW BLOCK DEPENDS UPON STAGE OF CONSTRUCTION).
EXAMPLE:
ASSUME FLOW IN RIVER TO BE 60,000 CFS AND THE LOW BLOCK SILL AT ELEV. 1150.
CURVE A - TAILWATER ELEV. = 935
ASSUME HEADWATER AT ELEV. 1171
HEAD ON DIVERSION TUNNEL = 1171 - 935 = 236'
HEAD ON LOW BLOCK = 1171 - 1150 = 21'
CURVE B - FLOW THROUGH TUNNEL = 45,000 CFS
CURVE C - FLOW OVER LOW BLOCK = 15,000 CFS
TOTAL FLOW = 60,000 CFS



CURVE A TAKEN FROM:
INTERIM REPORT Nº 4,
MOUNTAIN SHEEP DAM,
PORTLAND DISTRICT CORPS
OF ENGINEERS, 12-22-47

EXHIBIT L
SHEET 36 AMENDED



SECTION A-A

SCALE: 1" = 100'

PROJECT Nº 2173/2243 IDAHO-OREGON
HIGH MOUNTAIN SHEEP H.E. DEVELOPMENT
DIVERSION FACILITIES
SCALE: 1" = 20' UNLESS NOTED
PACIFIC NORTHWEST POWER COMPANY
SPOKANE, WASH. PORTLAND, ORE.

September, 1950

6-16381

25388

[Docketed Sept. 28, 1959]

BEFORE THE
FEDERAL POWER COMMISSION

Petition for Declaratory Order
Project No. 2173/2243

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Notice of Withdrawal

Comes now Pacific Northwest Power Company (Applicant) and, pursuant to Section 1.11(d) of The Rules of Practice and Procedure of the Commission, gives notice that it withdraws its PETITION FOR DECLARATORY ORDER filed with the Commission and dated June 24, 1958, and for reasons for such withdrawal states as follows:

Applicant filed its Petition for Declaratory Order to determine the status of its Application for License theretofore filed with the Commission prior to undertaking expenses necessary to prepare said Application for License for hearing. In the interim, and while such petition has been pending, Applicant has expended sums of money for such purpose, and has now underway such further surveys

and engineering work required. Consequently, the purpose for which said petition was filed is moot.

Respectfully submitted,

Pacific Northwest Power Company

By JOHN J. BURKE
President

(SEAL)

Attest:

ROBERT D. YEOMANS
Secretary

SMITH GRAY, HILL & RODGERS
Counsel for Applicant

25394

[Docketed Oct. 21, 1959]

Project No. 2243
Pacific Northwest Power Company

Honorable Fred A. Seaton
Secretary of the Interior
Washington 25, D. C.

Dear Mr. Secretary:

Pacific Northwest Power Company, of Portland, Oregon, has filed with the Commission an amended application for a major license for the proposed High Mountain Sheep hydroelectric Project No. 2243.

The project is briefly described in the enclosed statement dated October 6, 1959.

A copy of the application and amendments thereof with exhibits including reduced copies of maps and drawings is enclosed, and a set of negative photostats of the following maps and drawings are being sent to you under separate cover:

Exhibit J Sheet 1-A (FPC No. 2243-1)

Exhibit K Sheets A-1 through A-19, Amended A-4 FPC Nos. 2243-2 through -20 and -34)

Exhibit L Sheets 30 through 38 and 30 through 36 amended (FPC Nos. 2243-21 through -29 and -35 through -41)

In accordance with Section 4(e) of the Federal Power Act, you are invited to report whether any license issued, would interfere or be inconsistent with the purpose for which any reservation under your supervision was created or acquired, and to state the conditions which you consider necessary for the adequate protection and utilization of such reservation.

You are requested to give the Commission your views as to the measures which should be taken to protect wildlife resources in connection with the project in accordance with the act of August 12, 1958 (72 Stat. 563). Your advice concerning fishways is also requested pursuant to Section 18 of the Federal Power Act, 16 U. S. C. 811.

25395

We also invited you to report otherwise on the application to the extent you consider desirable.

Please let us have your reply within 60 days, or notice that you need additional time to reply.

Very truly yours,

J. H. GUTRIDE
Secretary

3 Enclosures:

No. 114779—Statement dated 10/6/59
No. 114780—Copy of Application & Amendments
No. 114781—37 Photostats

PWR ! ! !
JAS:lmc
10/9/59
cc: Sec. of Interior
SFRO
OGC
DLP

25398

[Docketed Oct. 26, 1959]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Project No. 2243

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Notice of Application for License

(October 26, 1959)

Public notice is hereby given that Pacific Northwest Power Company, of Portland, Oregon, has filed an applica-

tion under the Federal Power Act (16 U.S.C. 791a-825r) for a license for proposed water-power Project No. 2243, to be known as the High Mountain Sheep Hydroelectric Development and located on the Snake River and its tributary the Imnaha River, in Idaho and Adams Counties, Idaho, and Wallowa County, Oregon, and to consist of a concrete arch dam with side hill gated overflow spillway section located on the Snake River in Idaho and Oregon approximately .5 of a mile upstream from the Salmon River and 2.5 miles downstream from the Imnaha River forming a reservoir with top elevation of 1510 feet, extending 58.5 miles upstream from the dam to the Low Hells Canyon Development of Project No. 1971 and having total and maximum usable storage capacities of 3,600,000 and 3,100,000 acre-feet, respectively; two powerhouses located immediately downstream from the dam abutments, one on the Oregon side with initial installation of three generating units and provision for ultimate installation of two additional units, and the other on the Idaho side with initial installation of two generating units and provisions for ultimate installation of three additional units, each unit in both powerhouses being rated 175,000 kilowatts; an adjacent switchyard; and associated hydraulic and electrical facilities.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington 25, D. C., in accordance with the Rules of Practice and Procedure of the Commission (18 CFR 1.8 or 1.10). The last date upon which protests or petitions may be filed is December 4, 1959. The application is on file with the Commission for public inspection.

J. H. GUTRIDE
Joseph H. Gutride
Secretary

(25399)

25399

ADVERTISING ORDER

No. 38

U. S. Federal Power Commission

OCT 27 1959, 19

The Publisher of Adams County Leader

Council, Idaho

AUTHORITY TO ADVERTISE
Date 2/25/49, 19
No. FPC Order

Sir:

You are hereby authorized to publish the enclosed advertisement relating to application for li
for proposed water-power Project, No. 2243, filed by Pacific Northwest Power Company,
Portland, Oregon
to be set solid, without paragraphing, and without any display in the heading unless otherwise expres
authorized in the specifications attached to the advertisement, in the regular edition of your pap
four times, publication Nov. 6, 13, 20 & DECEMBER 27, 1959
(Give date on which publication is desired)
provided your rates are not in excess of the commercial rates charged to private individuals, with t
usual discounts.

Respectfully,

ENDORSEMENT OF ASSIGNMENT
Date, 19
No.

Thomas F. Caskid

Title Chief, Division of Budget and Fin

RECEIVED
OCT 27 1959
GENERAL ACCOUNTING

INSTRUCTIONS TO PUBLISHERS

Extreme care should be exercised to insure that the specifications for advertising to be set other than solid be definite de
and specific since no allowance will be made for paragraphing or for display or leaded or prominent headings, unless specifi
ordered, or for additional space required by the use of type other than that specified. Specifications for advertising other th
solid will accompany the advertisement copy submitted to the publisher with the advertising order and copies of both do
parts will be transmitted to the General Accounting Office with the voucher. The following is a sample of solid line adv
tisement set up in accordance with the usual Government requirements.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 15, 1913. Sealed proposals will be received at this office until 2 o'clock P. M. on the 25th day of June, 1913, and then opened, for all classes of work in connection with the United States post office at Indiana, Penn., in accordance with the specifications, copies of which may be had at this office or at the office of the custodian of the site, Supervising Architect, O. Wentworth, Superintending Architect.

Your bill for this service should be rendered upon the voucher form printed on the reverse hereof immediately after th
insertion of the advertisement. The voucher, together with a marked copy of each issue of the paper containing the adver
ment, should be addressed to

Federal Power Commission, Washington 25, D. C.

If copies of the publication are not available, it will be satisfactory if an affidavit of publication is furnished in lieu th

IMPORTANT

Charges for advertising when a cut, matrix, stereotype, or electrotype is furnished will be based on actual space used
allowances will be made for shrinkage.

In no case shall an advertisement extend beyond the date and edition herein named for publication.

U. S. GOVERNMENT PRINTING OFFICE 16-42570-4

(25400)

25400

ADVERTISING ORDER No. 19

Federal Power Commission OCT 27 1959, 19

Publisher of Idaho County Free Press

Grangeville, Idaho

AUTHORITY TO ADVERTISE
Date 2/25/59, 19
No. FPC Order

You are hereby authorized to publish the enclosed advertisement relating to Application for license proposed water-power Project, No. 2213, filed by Pacific Northwest Power Company, and, Oregon

set solid, without paragraphing, and without any display in the heading unless otherwise expressly ...rised in the specifications attached to the advertisement, in the regular edition of your paper, ... times, ~~[illegible]~~ on Nov. 5, 12, 19 ~~[illegible]~~ and 26, 1959
(Give date on which publication is desired)

...ed your rates are not in excess of the commercial rates charged to private individuals, with the ...discounts.

Respectfully,

...TMENT OF ASSIGNMENT
..., 19...

Thomas F. Carkeek

Title Chief, Division of Budget and Finance

RECEIVED
OCT 27 1959

INSTRUCTIONS TO PUBLISHERS

...ame care should be exercised to insure that the specifications for advertising to be set other than solid be definite, clear, ...ite since no allowance will be made for paragraphing or for display or leaded or prominent headings, unless specifically ...or for additional space required by the use of type other than that specified. Specifications for advertising other than ...l accompany the advertisement copy submitted to the publisher with the advertising order and copies of both docu... be transmitted to the General Accounting Office with the voucher. The following is a sample of solid line adver... set up in accordance with the usual Government requirements.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 10, 1913.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 25th day of June, 1913, and then opened, for the electric watch-portrait lock system in the United States post office at Indianapolis, Ind., in accordance with the specifications, copies of which may be had at this office or at the office of the custodian at the discretion of the Superintending Architect, O. Wunderlich, Supervising Architect.

...r bill for this service should be rendered upon the voucher form printed on the reverse hereof immediately after the last ...of the advertisement. The voucher, together with a marked copy of each issue of the paper containing the advertise... ...uld be addressed to

Federal Power Commission, Washington 25, D. C.

...pies of the publication are not available, it will be satisfactory if an affidavit of publication is furnished in lieu thereof.

IMPORTANT

...ge for advertising when a cut, matrix, stereotype, or electrotype is furnished will be based on actual space used and no ...will be made for shrinkage.

...case shall an advertisement extend beyond the date and edition herein named for publication.

U. S. GOVERNMENT PRINTING OFFICE 16-43859-4

241

(25401)

25401

Standard Form No. 1340—Revised
Comptroller General, U.S.
Gen. Reg. No. 330—Rev. Supp. No. 1

ADVERTISING ORDER

No. 20

U.S. Federal Power Commission

OCT 27 1959, 19

The Publisher of Wallowa County Chieftain

Enterprise, Oregon

AUTHORITY TO ADVERTISE
Date 2/25/59, 19
No. FPC Order

Sir:

You are hereby authorized to publish the enclosed advertisement relating to application for lic for proposed water-power Project, No. 2243, filed by Pacific Northwest Power Company, Portland, Oregon

to be set solid, without paragraphing, and without any display in the heading unless otherwise expressly authorized in the specifications attached to the advertisement, in the regular edition of your paper, four times, publish on Nov. 5, 12, 19 and 26, 1959
(Give date on which publication is desired)

provided your rates are not in excess of the commercial rates charged to private individuals, with the usual discounts.

Respectfully,

INSTRUMENT OF ASSIGNMENT
Date, 19
To

Thomas F. Caskell

Title Chief, Division of Budget and Fin

DOCKETED
OCT 27 1959

INSTRUCTIONS TO PUBLISHERS

Extreme care should be exercised to insure that the specifications for advertising to be set other than solid be definite, clear and specific since no allowance will be made for paragraphing or for display or leaded or prominent headings, unless specifically ordered, or for additional space required by the use of type other than that specified. Specifications for advertising other than solid will accompany the advertisement copy submitted to the publisher with the advertising order and copies of both documents will be transmitted to the General Accounting Office with the voucher. The following is a sample of solid line advertisement set up in accordance with the usual Government requirements.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 15, 1918. Sealed proposals will be received at this office until 2 o'clock p. m. on the 25th day of June, 1918, and then opened, for an electric vault-protection system in the United States post office at Spokane, Wash., in accordance with the specifications, copies of which may be had at this office or at the office of the custodian, at the discretion of the Supervising Architect, O. Wunderlich, Supervising Architect.

Your bill for this service should be rendered upon the voucher form printed on the reverse hereof immediately after the last insertion of the advertisement. The voucher, together with a marked copy of each issue of the paper containing the advertisement, should be addressed to

Federal Power Commission, Washington 25, D. C.

If copies of the publication are not available, it will be satisfactory if an affidavit of publication is furnished in lieu thereof.

IMPORTANT

Charges for advertising when a cut, matrix, stereotype, or electrotype is furnished will be based on actual space used and no allowance will be made for shrinkage.

In no case shall an advertisement extend beyond the date and edition herein named for publication.

U. S. GOVERNMENT PRINTING OFFICE 16-25870-1

25410

[Docketed Dec. 1, 1959]

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

ear Mr. Gutride:

This is in reference to your letter of October 21 trans-itting for our comments an amended application for a ajor license for the proposed High Mountain Sheep ydroelectric Project No. 2243 filed by the Pacific North-est Power Company, Portland, Oregon.

The U. S. Fish and Wildlife Service advises that addi-onal time will be needed to report on the application. It therefore requested that our reporting date be extended April 1, 1960.

Sincerely yours,

FRED G. AANDAHL
Assistant Secretary of the Interior

. J. H. GUTRIDE
Secretary
Federal Power Commission
Washington 25, D. C.

25489

[Docketed Feb. 1, 1960]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, William R. Connole, Arthur Kline and John B. Hussey.

Project No. 2243

In the Matter of

PACIFIC NORTHWEST POWER COMPANY

Order Fixing Hearing

(Issued February 1, 1960)

On March 31, 1958, Pacific Northwest Power Company filed an application for a license under the Federal Power Act for a proposed project known as the High Mountain Sheep Hydroelectric Development, designated in the Commission's records as Project No. 2243, to be located on the Snake River approximately .5 mile upstream from the Salmon River and 2.5 miles downstream from the Imnaha River. The dam having a maximum height of 690 feet with its top elevation at 1520 above sea level is proposed to be built across the Snake River, as indicated, with one abutment lying in Idaho County, Idaho, and the other in Wallowa County, Oregon.

The Applicant has requested a hearing at the earliest possible date, and other parties have indicated their interests in participating in such a hearing.

The Commission finds:

It is appropriate and in the public interest that a public hearing be held concerning the matters involved and the

issues presented by the application for license for Project No. 2243.

The Commission orders:

Pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by the Federal Power Act, particularly Sections 4, 6 and 308 thereof, and the Commission's Rules of Practice and Procedure, a public hearing shall be held commencing on March 21, 1960, at 10:00 a.m. (EST) at the Commission's hearing room, General Accounting Office Building, 441 G Street, N.W., Washington 25, D.C., concerning the matters involved and the issues presented by the application for a license for Project No. 2243.

By the Commission.

J. H. GUTRIDE,
Joseph H. Gutride,
Secretary.

(SEAL)

25502

[Docketed March 15, 1960]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Project No. 2243

PACIFIC NORTHWEST POWER COMPANY

Motion for Consolidation

Washington Public Power Supply System, applicant for a license to construct the Nez Perce project in the middle reach of the Snake River, hereby moves in pursuance of § 1.20 (b) of the Commission's Rules of Practice and

Procedure that the proceeding thereon be consolidated for hearing on all the matters in issue with the above-entitled proceeding in which a hearing has been scheduled to commence on March 21, 1960, and in support thereof states as follows:

1) The above-entitled proceeding involves an application for a license to construct a conflicting project known as the High Mountain Sheep Hydroelectric Development in the same reach of the Snake River and, hence, the two proceedings present common questions of law and fact.

2) Whereas, in Project No. 2173 the Commission held that for the Middle Snake Basin "any combination of projects which includes Nez Perce is consistently superior to any combination of projects which does not include Nez Perce"

(Opinion No. 307, p. 6), the issuance of a license for the High Mountain Sheep project would foreclose the issuance of a license for Nez Perce.

3) As between license applications by States and municipalities and other applicants, § 7(a) of the Federal Power Act requires the Commission to give preference to applications by States and municipalities provided their plans are equally well adapted to conserve and utilize in the public interest the water resources involved. Washington Public Power Supply System is a municipal corporation and an operating agency of the State of Washington presently comprised of 13 public utility districts. Moreover, as indicated by the Commission's decision in Project No. 2173, Nez Perce is superior to the High Mountain Sheep project, not merely its equivalent.

4) The Board of Directors of Washington Public Power Supply System authorized the filing of a license to con-

struct Nez Perce on February 19, 1960, after that project was put in jeopardy by the issuance of the Commission's Order Fixing Hearing on the High Mountain Sheep application and after having determined that its member systems with assistance from other Northwest public agencies could finance the preparation and prosecution of a Nez Perce license application. Preparation of the application then proceeded with

25504

dispatch and, though subject to modification and refinement as continuing studies and investigations may dictate, it has since been completed and is filed herewith.

Respectfully submitted,

EVELYN N. COOPER
/s/ Evelyn N. Cooper
1025 Connecticut Ave., N. W.
Washington, D. C.
Attorney for
Washington Public Power Supply System

Washington, D. C.
March 15, 1960

25509

[Docketed March 15, 1960]

BEFORE THE FEDERAL POWER COMMISSION

In the Matter of

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Nez Perce Project Application for License

(1) The Washington Public Power Supply System, a joint operating agency and municipal corporation, organized

under the laws of the State of Washington, and having its office and principal place of business in Kennewick, in the State of Washington, hereby makes application to the Federal Power Commission for a license to authorize the construction, operation and maintenance of certain project works fully described herein.

(2) The name, title and post office address of the person to whom correspondence in regard to this application shall be addressed are as follows:

Mr. Owen W. Hurd, Managing Director
Washington Public Power Supply System
130 Vista Way
Kennewick, Washington

(3) The Applicant is a municipal corporation and is organized under the following laws:

Revised Code of Washington—Chapter 43.52, Cumulative Supplement (especially Section 43.52.360 et seq.) as amended by Chapter 295 Laws of Washington for 1957.

The validity of the organization of the Applicant was affirmed by the Supreme Court of the State of Washington in the case of Keeting vs. Public Utility District No. 1 of Clallam County, 49 Washington (2d), 761, 306 P (2d) 762.

(4) The measure of control or ownership exercised by or over the Applicant by any other organization is as follows:

As indicated in (3), the Applicant is organized under appropriate Washington laws which allow cities or Public Utility Districts to form a Joint Operating Agency for the generation and transmission of electric energy. The present membership of the Applicant is

thirteen Public Utility Districts. Collectively the member Districts compose, control and own the Applicant organization. The actions and policies of the Applicant are governed by representatives of the member District, who comprise the Board of Directors of the System, by means of majority approval or disapproval of proposals presented to the Board. Details of the function, duties and reponsibilities for the organization and its physical parts are specifically set forth in the Rules submitted as part of Exhibit "A" of this application.

No other organization exercises any control over the Applicant.

(5) The Applicant operates and/or proposes to operate electric power plants and facilities within the Pacific Northwest.

(6) A concise general description of the project and the principal works is as follows:

The Nez Perce Project will consist of a concrete arch dam located approximately at river mile 186 on the Snake River between the States of Idaho and Oregon about two and one-half miles below the mouth of the Salmon River and forty-seven miles upstream from Lewiston, Idaho. The project will be designed and operated with other plants which may be constructed by the Applicant and with the

power supplies of the federal agencies in the Pacific Northwest and the Pacific Northwest Power Pool to utilize most effectively the streamflow and the head developed by the project.

Reservoir. The reservoir which will be created behind Nez Perce Dam will back water more than 62 miles upstream on the Salmon River, 61 miles upstream on the Snake River to the tail water elevation of the licensed but unconstructed Idaho Power Company's Hells Canyon Dam, and about 10 miles upstream on the Imnaha River. These distances are based on a normal pool elevation of 1,490 feet m.s.l. which would provide 4,500,000 acre-feet of usable storage for flood control and downstream power generation.

Dam and Spillway. The arch dam will be of the double curvature design, approximately 700 feet high, containing about 3,000,000 cubic yards of concrete. The crest of the dam will be at elevation 1,500, and length along the crest will be 2,000 feet.

• • • • • • • • • • •

25514

(7) The location of the project applied for is as follows:

(a) On the Snake River which at the location of the project forms the boundary line between the States Oregon and Idaho approximately 2.5 miles downstream from the confluence of the Snake and Salmon Rivers.

(b) In the State of Idaho in the County of Nez Perce (with the reservoir extending into Idaho and Adams Counties) and in the State of Oregon in the County of Wallowa.

25527

BEFORE THE DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIRECTOR OF CONSERVATION AND DEVELOPMENT
STATE OF WASHINGTON

In the Matter of the Application of Seventeen Public Utility Districts for the Formation of an Operating Agency Under RCW Chapter 43.52

Findings and Order Relating to Operating Agency to be Known as Washington Public Power Supply System

An application was filed in the office of the Director of Conservation and Development on October 8, 1956, for the creation of an operating agency pursuant to RCW Chapter 43.52 for the purpose of acquiring, constructing, operating and owning plants, systems and other facilities and extensions thereof for the generation and/or transmission of electric energy and power, to be known as the Washington Public Power Supply System. This application was executed by seventeen county-wide public utility districts, namely: each of the public utility districts named "Public Utility District No. 1 of ..... County" located in each of the following counties:

Benton	Grays Harbor
Chelan	Kittitas
Clallam	Klickitat
Clark	Lewis
Douglas	Okanogan
Ferry	Skamania
Franklin	Snohomish

also, Public Utility District No. 2 of Pacific County, Public Utility District No. 2 of Grant County, and Public Utility District No. 3 of Mason County. This application was made to the Director

of Conservation and Development after the enactment by the legislative body of each of said districts to be initial members thereof authorizing said district to participate. Such application sets forth (1) the name and address of each participant, together with a certified copy of the enactment authorizing its participation; (2) a general description of the project and the principal project works, including dams, reservoirs, power houses and transmission lines; (3) the general location of the project and the name of each stream upon which such proposed project is to be located; (4) the proposed use or market for the power to be developed; (5) a general statement of the electric loads and resources of each of the participants, and (6) a statement of the proposed method of financing the preliminary studies and the participation therein by each of the participants.

Within ten days after such application was filed with the Director of Conservation and Development notice thereof was published once a week for four consecutive weeks in newspapers of general circulation in the counties in which such project is located, setting forth the names of the participants and the general nature, extent and location of the project.

No public utility has objected to such application by filing any objection with the Director of Conservation and Development.

The Director of Conservation and Development having examined such application and being fully advised in the premises, does now make the following

FINDINGS

1. The statements set forth in said application are substantially correct.

2. The contemplated project is such as is adaptable to the reasonably foreseeable requirements of the members. No other public utility has indicated any intention by contract or by letter of intent to participate in the use of such project.

3. No other public utility objects to the formation of such operating agency.

4. Adequate provision has been and will be made for financing the preliminary engineering, legal and other costs necessary thereto.

Therefore, the Director of Conservation and Development now

ORDERS

1. That such operating agency is hereby created as a municipal corporation and operating agency of the State of Washington for the purpose of acquiring, constructing, operating and owning plants, systems and other facilities and extensions thereof for the generation and/or transmission of electric energy and power and for such other purposes as may be provided by law and authorized by the members of this operating agency pursuant thereto.

2. The name of this operating agency is hereby established as: "Washington Public Power Supply System".

3. The specific project for construction and operation for which this operating agency is formed shall be the construction of a system of works, plants and facilities for the generation and transmission of electricity to provide a dependable source of power supply for the participants, consisting of the principal project works, including dams, reservoirs, power houses and transmission lines set forth in Exhibit A attached to this Order, which is made by this reference a part hereof.

25530

Made and entered at Olympia, Washington, this 31st day of January 1957.

EARL COE
Director, Department of Conservation and Development
335 General Administration Building
Olympia, Washington

25613

[Docketed March 23, 1960]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Project No. 2273

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Notice of Application for License

(March 23, 1960)

Public notice is hereby given that Washington Public Power Supply System, of Kennewick, Washington, has filed an application under the Federal Power Act (16 U.S.C. 791a-825r) for a license for a waterpower Project No. 2273, to be known as the Nez Perce project to be located at about river mile 186 on the Snake River and about 2.5 miles below the mouth of the Salmon River and about 5.5 miles below the mouth of the Imnaha River, in Nez Perce, Idaho and Adams Counties in Idaho, and Wallowa County, Oregon.

The Nez Perce project will consist of a concrete arch dam approximately 700 feet high, a reservoir with a normal

pool elevation of 1490 feet (m.s.l.) extending 61 miles upstream on the Snake River to the Low Hells Canyon development of Project No. 1971, 62 miles upstream on the Salmon River, and about 10 miles upstream on the Imnaha River, and having a total capacity of 6,000,000 acre-feet and a maximum usable storage capacity of 4,500,000 acre-feet. One powerhouse is to be located on the Oregon side immediately below the dam with initial installation of six generating units each rated at 200,000 kilowatts. Provision is to be made for a future powerhouse similarly located on the Idaho side to house six more 200,000 kilowatt generating units, making the ultimate capacity of 2,400,000 kilowatts. An adjacent switchyard, access road and associated hydraulic and electrical facilities will also be included.

Pursuant to Section 24 of the Federal Power Act, the filing of this application has the affect of segregating from all forms of disposal any lands of the United States which may be contained within the project.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington 25, D. C., in accordance with the Rules of Practice and Procedure of the Commission (18 CFR 1.8 or 1.10). The last date upon which protests or petitions may be filed is May 9, 1960. The application is on file with the Commission for public inspection.

J. H. GUTRIDE
Joseph H. Gutride
Secretary

25631

[Docketed March 25, 1960]

PWR
JAS:lmc
3/22/60

cc: Hon. Seaton
SFRO
OGC
DLP

Project No. 2273
Washington Public Power Supply System

Honorable Fred A. Seaton
Secretary of the Interior
Washington 25, D. C.

Dear Mr. Secretary:

Washington Public Power Supply System, of Kennewick, Washington, has filed with the Commission an application for license for the proposed Nez Perce hydroelectric Project No. 2273.

The project is briefly described in the enclosed statement dated March 15, 1960.

A copy of the application with exhibits including reduced copies of maps and drawings is enclosed, and a set of negative photostats of the following maps and drawings are being sent to you under separate cover:

Exhibit J (FPC No. 2273-7)
Exhibit L (FPC No. 2273-1)

In accordance with Section 4(e) of the Federal Power Act, you are invited to report whether any license issued, would interfere or be inconsistent with the purpose for

which any reservation under your supervision was created or acquired, and to state the conditions which you consider necessary for the adequate protection and utilization of such reservation.

You are requested to give the Commission your views as to the measures which should be taken to protect wildlife resources in connection with the project in accordance with the act of August 12, 1958 (72 Stat. 563). Your advice concerning fishways is also requested pursuant to Section 18 of the Federal Power Act, 16 U.S.C. 811.

We also invite you to report otherwise on the application to the extent you consider desirable.

Please let us have your reply within 60 days, or notice that you need additional time to reply.

Very truly yours,

J. H. GUTRIDE
Secretary

3 Enclosures:
No. 115381—Statement dtd 3/15/60
No. 115382—Copy of Application
No. 115383—2 Photostats (u.s.c.)

25636

[Docketed March 30, 1960]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, William R. Connole and Arthur Kline.

Pacific Northwest Power Company Project No. 2243

and

Washington Public Power Supply System Project No. 2273

Order Consolidating Proceedings, Fixing Hearing, and Prescribing Procedure

(Issued March 30, 1960)

Pacific Northwest Power Company on March 31, 1958 filed application under Section 4(e) of the Federal Power Act (16 U.S.C. 797) for a license for proposed hydroelectric project works, including appurtenant facilities, designated the High Mountain Sheep Project No. 2243, on the Snake River at approximately river mile 188.9.

Washington Public Power Supply System on March 15, 1960, filed an application under Section 4(e) of the Federal Power Act for a license for proposed hydroelectric project works, including appurtenant facilities, designated the Nez Perce Project No. 2273, on the Snake River at approximately river mile 186.

After a notice duly given of application for license for Project No. 2243, the Commission by order of February 1, 1960, fixed a public hearing on the matter for March 21, 1960, which by subsequent notice was postponed until April 4, 1960. Numerous interested parties have requested, and

have been granted permission to participate in the proceedings on that application. Notice has been given with regard to the application for license for Project No. 2273.

It is appropriate in carrying out the provisions of the Federal Power Act that the proceedings on these conflicting applications for license be consolidated for the purpose of hearing. It is also appropriate and in the public interest that certain procedures be prescribed in advance of the hearing in these consolidated proceedings.

The procedures hereinafter prescribed are intended to eliminate any cause which might otherwise exist for a protracted hearing by requiring that the respective parties be prepared in advance of the hearing for the presentation of their direct case. This should result in serving the interests of those parties concerned with obtaining an orderly record, the saving of hearing time, and the associated costs and conveniences involved.

25637

A major problem is one of meeting the convenience of witnesses who travel long distances, and of allowing adequate time to prepare for cross-examination of their technical testimony. Under procedure as prescribed a witness will not be required to attend the hearing prior to his appearance for cross-examination. Another, by way of illustration, is the time-consuming problem caused by questions calling for conclusions and opinions without having laid a proper foundation therefor, and any such questions and answers in prepared testimony, filed as hereinafter provided, will be subject to motion to strike from the prepared testimony as hereinafter provided.

Copies of the daily transcript may be obtained by the parties by making advance arrangements therefor with the official reporter.

The Commission orders:

(A) The proceedings on the applications for license for Projects Nos. 2243 and 2273 are consolidated for the purpose of a hearing.

(B) Pursuant to the authority contained and subject to the jurisdiction conferred upon the Federal Power Commission by the Federal Power Act, particularly Sections 4(e), 10(a), and 308 thereof, and the Commission's Rules of Practice and Procedure, a public hearing shall be held on July 18, 1960 at 10:00 a.m. (EDST) in a hearing room of the Federal Power Commission, 441 G Street, N. W., Washington, D. C. respecting the matters involved and issues presented by the aforesaid applications for Projects Nos. 2243 and 2273, and the Commission's order of February 1, 1960 fixing a hearing for March 21, 1960, subsequently postponed to April 4, 1960, is hereby superseded.

(C) The following procedure is prescribed for the consolidated proceedings in Projects Nos. 2243 and 2273:

(1) The Applicants for Projects Nos. 2243 and 2273 (Applicants) shall file by May 16, 1960 with the Secretary of the Commission an original and ten copies of all of their testimony including qualifications of witnesses, and exhibits to be presented in their respective direct cases;

(2) All other parties, including the Commission's staff (other parties) shall file by June 16, 1960 with the Secretary, an original and ten copies of all of their respective direct testimony including qualifications of witnesses, and exhibits;

(3) All of the testimony, except exhibits, shall be in question and answer form;

(4) No exhibits, except those of which official notice may properly be taken, shall contain narrative material other than brief explanatory notes;

(5) All exhibits, except those of which official notice may properly be taken, shall contain brief and appropriate titles, and the exhibits shall be fully explained in the prepared direct testimony by the witness or witnesses sponsoring them;

(6) Each witness shall execute an affidavit adopting the testimony for which he assumes responsibility and an original and ten conformed copies of such affidavite shall be filed with his prepared testimony;

(7) Any party submitting more than one exhibit shall enclose a cover sheet listing the title of each exhibit in the sequence they are to be marked for identification;

(8) Two copies of all testimony including qualifications of witnesses and exhibits, shall be served on each party to this consolidated proceeding and a certificate of service thereof shall be attached to the original copy filed with the Secretary;

(9) Any motions to strike any part of the prepared testimony (prior to cross-examination), shall be filed by June 30, 1960, answers thereto shall be filed by July 11, 1960 and rulings on such motions will be made by the Examiner at the commencement of the hearing or prior thereto;

(10) Counsel for any party desiring to make an opening statement, but finding it inconvenient to attend the opening session, may mail a copy of his opening statement to the Examiner, and a list of counsel

for the Party, for incorporation in the record as though read;

(11) Upon the commencement of the hearing and after appearances, opening statements, and other preliminary matters, the exhibits previously filed with the Secretary, as provided above, will be marked for identification in the sequence directed by the Examiner, and thereafter the Examiner will require that the affidavits of the respective witnesses and their prepared direct testimony (together with the qualifications of the respective witnesses) previously filed with the Secretary as provided above, be copied into the record as though read, excepting any part or parts of the prepared testimony with respect to which he may have granted motion to strike; and

(12) The Examiner will specify the order of cross-examination for the information of the parties in making their respective witnesses available for cross-examination.

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(D) Requests for extensions of time concerning the time for any filings specified herein shall be made in writing, served on all parties and filed with the Examiner (together with a certificate of service) at least ten days in advance of the dates specified herein (or as may have been extended), and any answers thereto shall be filed with the Examiner within three days after the request for extension.

(E) The Commission Rules of Practice and Procedure shall apply in this consolidated proceeding except to the extent that they are modified or supplemented herein or to

the extent that they are further modified or supplemented by the Examiner with the consent of the parties.

By the Commission.

J. H. GUTRIDE
Joseph H. Gutride
SEAL *Secretary.*

25773

Presiding Examiner's Report on Pre-Hearing Conference

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25774

BEFORE THE FEDERAL POWER COMMISSION

In the Matters of:

PACIFIC NORTHWEST POWER COMPANY Project No. 2243

and

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
Project No. 2273

Hearing Room F-G
Federal Power Commission
441 G Street, Northwest
Washington, D. C.
Tuesday, May 16, 1960

The above-entitled matter came on for pre-hearing conference at 2:40 p.m.

BEFORE:

EMERY J. WOODALL, Presiding Examiner.

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Presiding Examiner: By an order issued March 30, 1960, the Commission ordered consolidation of these proceedings

and fixed the date of hearing and prescribed certain procedure.

On May 4, 1960, applicant, Washington Public Power Supply System, moved for an extension of the hearing date and the advance of the other dates fixed by the Commission's order correspondingly.

The applicant, Pacific Northwest Power Company, answered such motion, and in that connection requested a pre-hearing conference.

The Presiding Officer, on May 16, 1960, issued a notice fixing the date of conference for May 16, 1960, at a hearing room of the Commission, at which time the conference convened and the following persons were present representing the two applicants and the Federal Power Commission's staff:

Robert H. Griffin, Federal Power Commission
D. A. Sander, Federal Power Commission
Leonard Eesley, Federal Power Commission
A. G. Sunda, Federal Power Commission
Jack M. Shepley, Federal Power Commission
W. R. Farley, Federal Power Commission
Joseph B. Hobby, Federal Power Commission
William Reid Martin, Harza Engineering Company
Robert B. Gallup, R. W. Beck and Associates, Washington Public Power Supply System.

C. K. Willey, Harza Engineering Company
Evelyn N. Cooper, Washington Public Power Supply System.

Hugh Smith, Allan A. Smith, Charles Heltzel, Smith, Gray, Hill and Rodgers, for Pacific Northwest Power Company.

A. B. Martin, A. E. Alspaugh, Charles C. Bonin, for Pacific Northwest Power Company.

The conference was held in an informal manner, and after preliminary discussion between the parties, the technical assistance—I suppose you might as well say the engineers, hadn't we? Assistants, and engineers, we will put both in, were assigned the task of canvassing the potentialities of reaching agreement upon matters of a technical nature, including particularly matters of basic criteria to be used in the proof to be submitted by each of the applicants.

Mr. Farley was appointed chairman, and has prepared a written report. However, I will give him the opportunity to make further statement at this time.

Mr. Farley: Mr. Examiner, pursuant to agreement in the conference yesterday, on your instructions the engineers met and prepared a written report. Those included in the group included Messrs. Willey and Gallup representing the Washington Public Power Supply System, Messrs. Martin, Alspaugh and Bonin representing the Pacific Northwest Power Company, and Messrs. Sunda, Shepley and Farley representing

the Commission's staff.

We have prepared, I might call it, a document which is headed "Project Nos. 2243 and 2273, Engineering Items of Agreement", copies of which have been furnished to the Examiner and the two applicants.

It is my understanding that in addition to the nine items of agreement listed in this report there has just this afternoon been agreement reached on one other point which, if it is agreeable to the two applicants, would be as follows.

Presiding Examiner: Mr. Farley, let me suggest now that we ask the reporter to place this report, written report, on the record at this point, then you give the next one and it will be in sequence.

(The report referred to is as follows:)

Project Nos. 2243 and 2273

Engineering Items of Agreement

In order to make available for use of all parties in the proceeding on Project Nos. 2243 and 2273 a common set of basic water routings for the Columbia River System, the following basic criteria can be agreed upon.

These basic routings to be made available to all parties consist of those made by Pacific Northwest Power Company for system resources assumed for the year 1968 and those made by the Corps of Engineers, Portland, Oregon, for system resources assumed for the year 1985. All back-up material

leading to these routing studies will be available to all parties.

Variations in criteria as desired by any party for its own purposes will be handled by adjustment and so identified.

Specific items follow.

1. Representatives of the applicants will jointly prepare tables of stream flow for the years from 1928-48 based on CBIAC June 1957 data as modified and currently in use as of January 1960 by Corps of Engineers.

Tables of stream flows will be prepared for years 1960, 1985, 2010 conditions for Nez Perce, High Mt. Sheep, and Lower Canyon Sites. Nez Perce stream flows will be used for the China Gardens site, and Lower Canyon stream flows for Whitebird and Freedom sites.

Representatives of the applicants will determine minor adjustments in the stream flows for the above-mentioned and other projects. (End Page 1)

2. Such comparative power studies as will be made, shall use 1968 and 1985 systems, and either party may make studies for other systems if it desires. For studies with the 1968 system, stream flows for 1960 referred to in Item 1 above will be used.

3. For the 1968 comparative basis power studies, the system resources will include existing projects and projects under construction and under license plus Lower

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Monumental, Muddy, Meadows, Eden Ridge, Round Butte, and Little White Salmon as used in the Pacific Northwest Power Company studies. These resources do not include projects in the common reach which includes, as herein used, the Snake River from Low Hells Canyon normal pool level at elevation 1683 feet to the China Gardens tailwater elevation 845 feet, and the Salmon and Snake Rivers from Freedom normal pool at elevation 1780 feet to China Gardens tailwater elevation.

For the 1985 comparative basic power studies, Corps of Engineers Sequences IV-H and IV-J system resources as contained studies currently (May 1960) being made for the Federal Power Commission staff are acceptable outside the common reach.

Within the common reach, comparative studies will include Freedom, White Bird, Nez Perce and its relation to Low Hells Canyon, and China Gardens as against Freedom, Lower Canyon, High Mountain Sheep and its relation to Low Hells Canyon, and China Gardens. (End Page 2)

The comparative power studies will use the basic routings for systems including Nez Perce or High Mountain Sheep at normal pool elevation 1510 feet and Lower Canyon at elevations 1575 and 1595 feet. Variations in pool

levels will be taken into account by adjustments to the basic routings.

4. Load shapes for the comparative studies for the

1968 system will be based on the West Group forecast. For the 1985 comparative studies load shapes will be these used by the Corps of Engineers in their current (May 1960) studies.

5. Representatives of the parties will exchange information such as design heads, H/K factors, efficiencies, etc., which affect routing studies.

6. Comparative economic studies will not take into account a cost for benefits, if any, provided by the Brownlee reservoir of Idaho Power Company and/or the potential Crevice reservoir.

7. It is assumed that the basic routing studies provide for flood control and navigation.

8. For the purposes of the comparative studies, minimum discharge capacities at minimum pool elevations with respect to flood control shall be assumed as those specified in the letter of February 24, 1960, from the Chief of Engineers for the High Mountain Sheep Project No. 2243, in the letter of ..... from ..... for the Nez Perce Project No. 2273, and in the "Review of H. D. 531, 81st Congress, 2nd Session" June 1958, by the North Pacific Division Engineer, on page 273, of Volume I for the Lower Canyon Project. (End Page 3)

9. For comparative studies, it is assumed that the operation of the system resources outside of the common reach will be left unchanged in the basic routings

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in the adjustment to be made to include the Crevice Project in the system.

In addition to the above items, there are others which can be agreed upon but which will require more time and information not immediately available. Among such items are:

a. Reservoir area and volume relationships

b. Design floods and spillway capacities

c. Plant characteristics and initial and ultimate plant installations

d. Potential back-water encroachments

e. Criteria for dam design

f. Crevice routing studies

• • • •

Presiding Examiner: Now go ahead with the additional point.

Mr. Farley: The additional point which could be designated as Item 10 would be as follows:

For cost estimates, January 1960 price levels will be used except for generators for which the price level will be as of March 1960.

Presiding Examiner: Is there any objection to that?

Mrs. Cooper: No objection.

Presiding Examiner: All right, that will be understood, then, as part of the agreement.

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Mr. Farley: Then there is just one comment I would like to make that Mr. Martin raised a few minutes ago referring to Item 3 on page 2. He suggested what might be considered an editorial change. However, rather than

change the item, I believe maybe that an explanation might be of help.

In the first paragraph of Item 3, it might be concluded that the system resources, or rather the comparative basic power studies did not include resources within the common reach as defined in that paragraph. Actually, the paragraph was intended to deseribe resources out of the common reach, and the third paragraph on that page covers what the studies include within the common reach.

Presiding Examiner: Does that cover it?

Mr. Hugh Smith: Yes, sir.

Presiding Examiner: Now, from the standpoint of other matters, there is not much else to include.

We canvassed the possibility of questions regarding jurisdiction and the qualification of applicants, and it seems to me that this statement will cover that.

Neither applicant will raise any question regarding jurisdiction in the proper qualification of the competing applicant which will require determination during the hearing except such decision as is part of the final action upon the applications.

Is that a clear enough statement?

Mrs. Cooper: I think it is abundantly clear.

Mr. Eesley: That is all right.

Presiding Examiner: It is harder sometimes to state a negative conclusion than it is a positive one.

Mr. Hugh Smith: That is right.

Presiding Examiner: That means, then, there are no threshold questions of law that need to be determined before proceeding to the trial, and that is the reason for mentioning this.

Now, the matter of formal exhibit numbers has been mentioned by Mr. Eesley. It seems that Pacific Northwest is

proposing to number their exhibits which they were prepared to file on the 16th of May by using the initials "PNPC", is that correct?

Mr. Hugh Smith: That is correct, sir.

Presiding Examiner: And then using a sequence. Now, it would seem to me that a proper construction of the Commission's order with regard to the filing of your exhibits would almost require—first of all, it has got to be assumed and implied that the Commission meant that they are in final form.

Mr. Hugh Smith: Yes, sir.

Presiding Examiner: And that they are fully intelligible. Therefore, any cross referencing absolutely requires that you use a sequence of numbers, and therefore it immediately suggests

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that in this case each of the applicants should use their own series of numbers, and I would suggest, if it is agreeable, that Washington Public Power simply use the initials "WP", and then beginning with 1, use their exhibit numbers in their own sequence. All this is doing is simply adopting to our procedure for this case, because of the nature of the Commission's order, more or less the type of sequence numbers used by the courts, where the plaintiff has its own series of numbers and the defendant its series of numbers.

Frankly, I would prefer that in all these cases. We have never done it here, but there is certainly no harm in it, and I would so order that that be done unless some cause to the contrary be shown.

Mrs. Cooper: Mr. Examiner, if you have no objection, I think I would prefer the designation "WPPSS".

Presiding Examiner: I am perfectly agreeable to any initials, I merely illustrated by that, but you are free to

use your own, each of you can fill in all your own blanks, you can refer to the others, and you have the matter under control.

Now, a further provision in that regard should be made, and that is that intervenor's exhibits, if any, should come under the heading "Int.", for the beginning of "Intervenors", and then the sequence number. That would give you three series of numbers for exhibits in the case, each of the applicants

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having their series, and the intervenors having one consolidated series.

Mr. Eesley: You haven't mentioned the staff yet.

Presiding Examiner: The staff exhibits would have their own FPC series. Thank you for reminding me.

Now, I don't know of any other necessary orders in this connection. The Commission's order fully sets forth this thing, and all we are doing is implementing that to fit into the situation.

The only other thing, therefore, is the matter of time.

Mr. Eesley: Well, pardon me, Mr. Examiner. We had mentioned a few things in our conference with the Examiner and among ourselves about procedure, further procedure, and that was we would like to at least make a note of it at this time that we agree that we think it would be a very helpful thing if a pre-hearing conference were held devoted to the question or problem of fish as involved in these two applications, and we also make the suggestion that a pre-hearing conference for that purpose be held possibly in Portland, but at a date to be set in the future, we hope in the very near future upon recommendations of the applicants or the Commission staff, which we hope to get up to the Examiner for that purpose after we have contacted the applicants.

Presiding Examiner: Well, I think it is well to have this

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report show whether or not this idea is agreeable to the parties, and, if so, then we could leave the matter on the basis that it will be acted upon in due course when further coordination has been had with the various fisheries parties. I think it necessary to secure for any such major travel operation it would certainly seem to be necessary to secure their full cooperation and agreement that they would participate.

If so, then I think the next thing is to confer among yourselve and more or less decide on the appropriate date. We will try to work one out, and I will go along with you.

I feel that we might do some permanent good if we can ever teach these people in the conservation field how to make a good showing. I believe in conservation.

Mrs. Cooper: That is what we had in mind, Mr. Examiner.

Presiding Examiner: We will leave that standing there, and that does bring us to the matter of dates.

Mr. Eesley: I have one other thing.

We had also suggested inasmuch as the order calls for the Examiner to set a schedule of appearances at the time the hearing opens that brought up the question of whether or not it would be helpful in carrying out this order that a pre-hearing conference be held, say, within ten days of the hearing date that is set for the purpose of setting that schedule. After all the direct testimony of all parties has been in

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and there has been an opportunity to review it, there might be an opportunity at such a pre-hearing conference also to reduce a numebr of issues, and the possibility, too, of agreement on whether or not certain witnesses would even be examined, and we think it might be helpful that it

be considered, having a pre-hearing conference for that purpose carrying out the function of the Examiner in setting an appearance schedule. We are making this suggestion, not asking that any order at this time be issued on it, but primarily for the purpose of recording it and bringing it up at a later date.

Presiding Examiner: Well, I am glad to have it mentioned. I feel that it is quite possible that a second meeting after the two cases have been filed, it is quite possible to find common ground. That was used in the El Paso case, in addition to the first pre-hearing conference we held another after we had started the hearing, and it turned out very satisfactorily, and avoided the necessity of several motions, and everybody was I think perfectly happy about it, but I do think that is something that will have to be passed upon them by the person then in charge.

Now, are we ready to fix the dates? In this matter of dates, I am reminded that a person in this spot is like a politician making an appointment to an office. He can't make everybody happy.

There are these dates that it seems to me to have to be

rearranged. The hearing date, the date of the applicants filing of their direct cases, the filing of testimony or evidence by other parties to the proceeding, motions to strike, and the answers to such motions.

I have studied this in relation to the calendar as well as the record involved, and what are the complexities of it, and I am convinced that a three-month period is reasonable, and therefore I am going to fix the dates in that relation.

Mrs. Cooper: Mr. Examiner, may I be heard on that for a moment?

Presiding Examiner: I thought you had.

Mrs. Cooper: We did not undertake to make a full resentation yesterday as to our time needs. I believe nat was a mistake, but in any event, the agreements that ere achieved between the Examiners have served in our dgment to cut down materially on the hearing time, but ot to cut down, one whit, on our preparatory work or reparatory time, and the outside date that we indicated our motion is literally an outside date and will at best owd us tremendously. We are going to need the full me for all of the power studies, power analyses for the ldditional design and cost estimating work independent of e fish facilities design and cost estimate problems, and, a matter of fact, the agreement between the engineers, anything, as added to our pre-

ng workload to the extent that it does require us to do rk in addition to that which we had otherwise planned do, but I am not suggesting that that warrants a further tension of what we have requested.

I should also point out that we have involved somet ng id not mention yesterday, two parties, one an institution, other an independent consultant, neither of whom is in a sition because of other commitments to complete the work y have obligated themselves to do for us before the first September, which means that I won't even be in a posi- n to translate that work into testimony until that date. is date we requested was not a date set with any idea of re being room to compromise on it. It was an honest and nimum need.

Presiding Examiner: I read the papers in this, and it ms to me that it is quite evident that preparation should e been substantially made ahead of this time.

n addition, I am not wholly unaware of the kind of terial that is involved here, and it would seem to me

that we would be remiss to permit a party to hold up this operation and throw it into the Christmas holiday season of the year, for example, on the excuse that some technical person can't even begin work on this until September 1.

Now, I think it is something wrong with your whole slant on approaching this matter, and as a result I personally

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would not be in a position at this time to give more than three months, and not the four months—in fact, it is three calendar months in a realistic sense, because I am going by the third week in each month, and you are getting extra days, so that it seems to me that I am conscience-bound to go that as the extreme.

Mrs. Cooper: Mr. Examiner, just so there will be no misunderstanding, I did not mean to rest our time request upon the problems involved with the two parties that I mentioned, nor did I mean to imply that they would not be in a position to begin work until September 1. My statement was that they could not complete it until that date.

Presiding Examiner: Well, if we have the hearing on the 17th of October, the applicants should file their papers on the 15th of August, the others should file their papers on the 19th of September, and any motions to strike must be made in writing as the Commission provides by September 30 and the answers to such motions must be filed on or before the 10th of October. That is a three months' postponement in each particular date.

Now, as the time approaches if a showing can be made of total impossibility, I suppose further grace will have to be allowed, but I can't do it on this present record, and I think we will have to stand on that.

Is there anything further to come before us?

25791

Mr. Eesley: I don't believe so.

Presiding Examiner: This session of the pre-hearing conference which has been recorded is available for the public record, and will be mailed by the Commission to the parties after it has been transcribed, and it will therefore serve the same purpose as a report and order separately prepared, and may be considered as part of the record at a later date.

Mr. Eesley: Shouldn't it be mailed to the intervenors as well?

Presiding Examiner: I meant to all the parties.

Thank you very much.

(Thereupon, at 3:05 o'clock p.m., the pre-hearing conference was concluded.)

26063

[Docketed August 31, 1960]

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Project No. 2273

Honorable Fred A. Seaton
Secretary of the Interior
Washington 25, D. C.

Dear Mr. Secretary:

Washington Public Power Supply System of Kennewick, Washington, has filed with the Commission an amended application for license for the proposed Nez Perce hydroelectric project No. 2273.

The project is briefly described in the enclosed statement dated August 23, 1960.

A copy of the application with exhibits including reduced copies of maps and drawings is enclosed, and a set of nega-

tive photostats of the following maps and drawings are being sent to you under separate cover:

Exhibit J Sheets 1 (rev.), 2, 3
(FPC Nos. 2273-11, -12, -13)

Exhibit K Sheets 1 through 23
(FPC Nos. 2273-14 through 36)

Exhibit L Sheets 1 through 18
(FPC Nos. 2273-37 through 54)

In accordance with Section 4(e) of the Federal Power Act, you are invited to report whether any license issued would interfere or be inconsistent with the purpose for which any reservation under your supervision was created or acquired, and to state the conditions which you consider necessary for the adequate protection and utilization of such reservation.

You are requested to give the Commission your views as to the measures which should be taken to protect wildlife resources in connection with the project in accordance with the act of August 12, 1958 (72 Stat. 563). Your advice concerning fishways is also requested pursuant to Section 18 of the Federal Power Act, 16 U.S.C. 811.

We also invite you to report otherwise on the application to the extent you consider desirable.

Please let us have your reply as soon as possible.

Very truly yours,

J. H. Gutride
Secretary

3 Enclosures:
No. 96219—Statement dtd 8/23/60
No. 96220—Copy of Application
No. 96221—44 Photostats (u.s.c.)

26307

[Docketed Oct. 17, 1960]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, Arthur Kline and Patil A. Sweeney.

Project No. 2243
PACIFIC NORTHWEST POWER COMPANY

Project No. 2273
WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Order Vacating Orders Permitting Intervention

(Issued October 17, 1960)

Northwest Public Power Association on October 3, 1960, filed a motion requesting the Commission to vacate its orders of March 3, 1960, and August 16, 1960, granting Northwest Public Power Association intervention in the proceedings in Project No. 2243, and in that part of the consolidated proceedings involving Project No. 2273, respectively, stating that a substantial part of Northwest Public Power Association has become directly involved in Project No. 2273, and that its interests in opposing the application for license by Pacific Northwest Power Company in Project No. 2243 will be adequately represented by Washington Public Power Supply System, applicant in Project No. 2273, except for the possible need to participate in the consolidated proceedings as protestants.

A similar motion was also filed by National Hells Canyon Association on October 3, 1960, stating that a functional regrouping of its constituent members has brought them in direct participation through Washington Public Power Supply System, applicant in Project No. 2273, and that to-

gether with the independent intervention of the Oregon and the Washington State Granges intervention by National Hells Canyon Association, Inc., is unnecessary.

The Commission finds:

In view of the fact that the intervenors, Northwest Public Power Association and National Hells Canyon Association heve requested vacation of the orders permitting their intervention, the motions should be granted.

The Commission order:

The orders of March 3, 1960 and August 16, 1960 granting Northwest Public Power Association and National Hells Canyon Association intervention

in the proceedings in Project No. 2243 and Project No. 2273 are hereby vacated.

By the Commission.

(SEAL)

J. H. GUTRIDE
Joseph H. Gutride,
Secretary.

26703

[Received Dec. 8, 1960]

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Dear Mr. Knykendall:

In response to the request of Presiding Examiner Levy appearing at page 3448 of the transcript in the Matter of Pacific Northwest Power Company (Project 2243) and

Washington Public Power Supply System (Project 2273) for the inclusion in the record of testimony from Departmental witnesses on the load and resource data in the Department's letter of November 21, 1960, commenting upon the license applications, the Department will make available Mr. Bernard Goldhammer of the Bonneville Power Administration to testify.

In the interests of a clear and orderly presentation of Mr. Goldhammer's material, we believe that affirmative testimony should be presented prior to his cross-examination. Accordingly, Mr. Goldhammer's qualifications, testimony and supporting exhibits will be distributed to the staff and all parties at least one week prior to his appearance for cross-examination.

Mr. Goldhammer's continuing responsibilities in the Department, including matters connected with the Canadian Storage negotiations, are such that it is difficult to state at this time precisely when he can appear. The earliest practicable time appears to be January 9 which, in turn, would call for advance transmittal of prepared testimony on January 2. Contingencies in connection with the Treaty negotiations, however, might conceivably necessitate a postponement of these dates. We will endeavor to inform you of firm dates as quickly as possible.

In view of these uncertainties, the parties and the Examiner may wish to consider a somewhat later time for Mr. Goldhammer's appearance.

Sincerely yours,

ELMER O. BENNETT
Under Secretary of the Interior

Hon. Jerome K. Kuykendall, *Chairman*
Federal Power Commission
Washington 25, D. C.

26798

[Docketed Jan. 18, 1961]

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Dear Mr. Kuykendall:

Please refer to our letter of December 8, 1960, referring to testimony by Mr. Bernard Goldhammer of the Bonneville Power Administration in the consolidated proceeding in Projects Nos. 2243 and 2273.

Our letter of December 8, 1960, was in response to the request of both applicants, joined in by the Presiding Examiner, appearing at pages 3447-3449 of the transcript. Mr. Goldhammer's testimony is concerned with the discussion of loads and resources set out at pages 2 and 3 of the Department's letter of November 21, 1960, and in the attachment thereto entitled "An Estimate of Power Situation, West Group Area, 1961-62 through 1970-71." In our letter of December 8 we advised that in the interests of a clear and orderly presentation it was believed that affirmative testimony should be presented prior to Mr. Goldhammer's appearance for cross-examination. On that basis, the Department acceded to the request for his appearance as a witness.

Enclosed herewith are the original and 10 conformed copies of Mr. Goldhammer's prepared testimony and exhibits. A conformed copy is also being supplied to each party to the proceeding.

We note from pages 5065-5066 of the transcript some question as to whether the Department insists that Mr. Goldhammer be heard within a week following the filing of Mr. Goldhammer's prepared testimony. We note also the Pre-

siding Examiner's expressed preference that Mr. Goldhammer's testimony be filed as soon as possible to give all parties time to study it and prepare for cross-examination.

Our letter of December 8 referred to the distribution of Mr. Goldhammer's proposed testimony "at least one week" prior to his appearance for cross-examination purely on the assumption that the parties would want a minimum of one week to study his testimony prior to Mr. Goldhammer's appearance. We wish to make clear, however, that the Department has neither interest in nor intention of controlling the time of Mr. Goldhammer's appearance on the stand other than as it may relate to other commitments on his time in connection with his responsibilities as a Departmental employee.

26799

Mr. Goldhammer will be available at the convenience of the parties and the Presiding Examiner. It would be appreciated if at least several days' advance notice can be given in order that Mr. Goldhammer's travel arrangements can be completed.

Sincerely yours,

ELMER O. BENNETT
Under Secretary of the Interior

Hon. Jerome K. Kuykendall, *Chairman*
Federal Power Commission
Washington 25, D. C.

Enclosure

26958

[Docketed April 24, 1961]

BEFORE THE FEDERAL POWER COMMISSION

Project No. 2273

In the Matter of the Nez Perce Project

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Amendment No. 1 to Amended Application for License

The AMENDED APPLICATION FOR LICENSE, Nez Perce Project heretofore filed by the WASHINGTON PUBLIC POWER SUPPLY SYSTEM is hereby amended by adding thereto all the matter hereinafter set forth as AMENDMENT No. 1 to AMENDED APPLICATION FOR LICENSE, Project No. 2273.

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26960

The High Mountain Sheep Project will consist of a concrete arch dam located approximately at river mile 189 on the Snake River between the States of Idaho and Oregon, about eight-tenths of a mile upstream from the mouth of the Salmon River and fifty miles upstream from Lewiston, Idaho. The Project will be designed to operate with other plants which may be constructed by the Applicant and with the power supplies of the federal agencies in the Pacific Northwest Power Pool to utilize more effectively the streamflow and the head provided by the Project.

Reservoir. The reservoir which will be created behind the High Mountain Sheep dam will back water more than 58 miles upstream on the Snake River to the tailwater elevation of the Idaho Power Company's licensed but unconstructed Hells Canyon dam, and about 10 miles upstream on the Imnaha River. The reservoir will have a maximum

pool elevation of 1510 feet above mean sea level and will impound approximately 3,600,000 acre-feet of total storage.

Dam and Spillway. The concrete dam will be of the

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double-curvature arch type, approximately 670 feet high, containing about 2,100,000 cubic yards of concrete including adjoining thrust blocks. The crest of the dam will be at elevation 1520 and the length along the crest will be 1,650 feet, including thrust blocks and adjoining spillway.

Maximum controlled headwater level will be at elevation 1510. Outlet works and turbine intakes will be set low enough to permit drawdown of the reservoir to elevation 1337 or below, providing a minimum of 2,250,000 acre-feet of useful storage for power regulation and flood control.

A conventional chute spillway will flank the arch dam on the right abutment. The spillway will be controlled by four tainter gates each 50 feet wide by 60 feet high. The chute will terminate in a flip bucket which will deflect the spillway discharge upward and outward to impinge in the river channel well downstream of all project structures. Discharge capacity of the spillway will be approximately 375,000 cubic feet per second at reservoir elevation 1510.

Powerhouse. The initial powerhouse, located downstream of the dam on the right bank of the river, will be of the indoor type built of reinforced concrete. The outer walls of the powerhouse, subject to high tailwater, will be reinforced against maximum tailwater pressure. The powerhouse will contain six generator bays, an erection bay, and service areas. Access to the powerhouse will be by road from the downstream right

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bank and through an access tunnel.

The future powerhouse will be tentatively of the underground type, located in the left bank, opposite the initial

powerhouse. It will contain four units and an erection bay. Access to this structure will be from the right bank over a bridge across the river channel located at the downstream end of the initial powerhouse.

Outlet Works. Low level discharge capacity will be provided by seven 108 inch diameter steel lined conduits carried through the arch above elevation 1000. Each of these conduits will be terminated with a 102-inch ring jet discharge regulating valve. Gate guides on the upstream face of the dam will be provided for each outlet conduit, and one gantry operated tractor gate will be provided. The total discharge capacity of the low-level outlet works and five powerhouse units will be 65,000 cubic feet per second at pool elevation 1382.

Intakes and Penstocks. Intakes for the initial turbines will be located on the face of the arch dam at elevation 1100, well below the anticipated minimum reservoir elevation. Each intake will serve two turbines and will have guides for service gates. One set of gates will be provided to unwater two powerhouse units concurrently. A gantry crane operating on the crest of the dam will handle the gates.

Steel penstocks, 24 feet in diameter will be encased in the dam and extend downward through the dam into the foundation

and then horizontally through tunnels towards the powerhouse. Each of these penstocks will bifurcate into two 17-foot diameter penstocks and thus serve two individual turbines. A butterfly valve, 17 feet in diameter will be installed in each penstock at the point at which it enters the powerhouse.

Provisions will be made in the dam for intakes and additional penstocks to accommodate four additional units on the left bank.

Powerplant Equipment. The six generating units installed initially will be rated 210,000 kva at 0.95 power factor. The six-unit plant can produce a maximum output of 1,313,000 kilowatts at the high voltage side of the step-up transformers. The main step-up transformers will be located on a deck behind the powerhouse. High voltage transmission lines will run from a powerhouse pull-off structure to a switchyard located approximately one mile downstream from the powerhouse. This switchyard could also serve a lower Canyon Project in this reach of the Salmon River.

Transmission Plan. The production of the High Mountain Sheep Project will be integrated with the federal system through appropriate transmission facilities presumed to be built by the Bonneville Power Administration as additions to the Bonneville Grid System. Preliminary transmission studies conducted in cooperation with the Bonneville Power Administration have indicated that three 345 kv lines would accomplish

this interconnection. All of these lines would originate at the High Mountain Sheep site and terminate at appropriate Bonneville Power Administration facilities, most likely at McNary, Spokane, and Lewiston.

Final determination of transmission facilities associated with the High Mountain Sheep Project will be governed, of course, by the development and timing of additional generating plants and loads in the Pacific Northwest in the late 1960's.

Access Road. Access to the site will be provided by a road to be constructed from Winchester, Idaho, a distance

of about 38 miles. A bridge across the Salmon River near the confluence of the Snake and Salmon Rivers will provide access to the site. Access to the powerhouse from the top of the dam will be provided by an extension of the main access road down to the lower elevations to a tunnel under the spillway.

27084

[Docketed May 2, 1961]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

PACIFIC NORTHWEST POWER COMPANY — Project No. 2243

WASHINGTON PUBLIC POWER SUPPLY SYSTEM — Project No. 2273

Presiding Examiner's Ruling on WPPSS Motion for Leave to File Amendment to License Application, PNPC Motion to Dispense With Rebuttal Testimony, and Recess of Hearing to June 12, 1961

(May 2, 1961)

On April 24, 1961, WPPSS filed a motion for leave to file an amendment to its pending Nez Perce application in Project No. 2273 for a license to construct an alternative High Mountain Sheep Project. WPPSS states that it is not abandoning its Nez Perce application but is filing the proposed amendment to indicate its willingness to construct a High Mountain Sheep Project "in the event the Commission should decide, contrary to our contentions, that a High Mountain Sheep plan of development is more comprehensive than the Nez Perce plan of development," and to invoke its "statutory preference" under Section 7(a) of the Act. (Tr. 9790)

At the hearing on April 26, 1961, PNPC and the Staff both opposed WPPSS's motion, PNPC filed an alternative "Motion To Dispense With Rebuttal Testimony" on the ground that WPPSS, by applying for a license on the High Mountain Sheep site, is now estopped from denying that such project is "best adapted to a comprehensive plan." Consequently, argues PNPC, no useful purpose can be served by the presentation of WPPSS's rebuttal evidence to show a contrary conclusion. WPPSS opposes PNPC's motion on the ground that the Act authorizes the filing of alternative applications without the necessity of an election. Consequently, it cannot be estopped from opposing PNPC's High Mountain Sheep Project.

PNPC accuses WPPSS of claim jumping and charges that the proposed amendment is the latest maneuver in a consistent program to delay the progress of the hearing to a conclusion. It argues that acceptance of the amendment would permit the introduction of a new direct case, inadmissible as rebuttal, with new design and cost evidence. The Staff's opposition to WPPSS's motion is based on the view that it is too late now for WPPSS to present an alternative High Mountain Sheep Project as part of its direct case and that the proposed filing would violate the Commission's order of March 30, 1960, consolidating the competing Nez Perce and High Mountain Sheep applications for hearing and prescribing the procedures for presenting the direct cases of both applicants, the interveners and the Staff.

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1. The present hearing is being conducted pursuant to an order of the Commission issued March 30, 1960, consolidating WPPSS's application, filed March 15, 1960, to build Nez Perce with PNPC's application, filed March 31, 1958, to build High Mountain Sheep. Hearing on PNPC's appli-

cation was originally scheduled for March 21, 1960. The filing by WPPSS on March 15, 1960, of its competing Nez Perce application led first to a postponement of the hearing on High Mountain Sheep and then to a consolidation of the proceedings on the conflicting applications for license for the purpose of hearing. The Commission's order of March 30, 1960, provided for the canned presentation of the direct direct cases of all of the parties by June 16, 1960, in advance of the hearing originally scheduled to commence on July 18, 1960. Cross-examination of witnesses whose prepared direct testimony was filed and admitted would be covered at the hearing.

As a result of various applications by WPPSS for extension of time, commencement of the hearing was postponed from July 18, 1960, to October 17, and again to November 4, 1960. The hearing commenced on November 4, 1960, after a further WPPSS motion for a continuance until January 6, 1961, was denied.

The direct testimony of the competing applicants has been on file since September 2, 1960. Cross-examination was completed in February, and the Portland fishery hearing ran from March 13, to March 28, 1961. The original date for the commencement of rebuttal testimony was fixed in the Presiding Examiner's ruling of January 31, 1961, as April 10, 1961. At the close of the Portland hearing, it was extended to April 24, 1961. On April 18, 1961, the Presiding Examiner denied a motion filed by WPPSS, referred to him by the Commission, for a continuance of the date of resumption of the hearing for rebuttal testimony to June 12, 1961.

I have reviewed this chronology because the motion for leave to file this amendment must be evaluated in the context of prior moves to delay the progress of the hearing to a conclusion. The granting of WPPSS's motion would

require a new direct case in which there would be presented new WPPSS plans, designs and cost estimates, not now in the record, for its proposed High Mountain Sheep Project. This would require new testimony, witnesses exhibits, new revisions of all the other projects affected, and a complete reevaluation by the other parties of their prior presentation, plus such revisions or additional evidence they may deem necessary to protect their interests. The present hearing then becomes merely the first round in a contest whose scope or duration cannot be determined.

27086

Moreover, this motion is inconsistent with the Commission's order of March 30, 1960, under which the competing applications of WPPSS and PNPC were consolidated for hearing and the procedures followed to date established "to eliminate any cause which might otherwise exist for a protracted hearing by requiring that the respective parties be prepared in advance of the hearing for the presentation of their direct case."

In addition, the proposed amendment is untimely filed. Section 1.11(a) of the Commission's Rules of Practice and Procedure provides in pertinent part "No amendment to a pleading may be filed within 5 days next preceding the commencement of or during a hearing unless directed or permitted by the Commission or the presiding officer after opportunity for all parties to be heard thereon." This hearing commenced November 4, 1960. The rule was designed to bar amendments as of right during a hearing absent a showing of good cause for the late filing.

The motion offers no explanation or justification as to why this application by WPPSS to build a High Mountain Sheep Project and to present new evidence and testimony in support thereof was not, or could not have been, presented

as part of its original application; or in any event, prior to the commencement of the hearing in November 1960. The motion cites no supervening facts or circumstances justifying the late filing.

WPPSS's reliance on *City of Seattle* and *Pend Orielle PUD No. 1, Project No. 2144,* discussed in its "Reply to Answer of Staff Counsel. * * *" is misplaced. The PUD filed its alternative plans *ab initio* and prior to consolidation for hearing. The City of Seattle did not seek to file an amendment to its application on a new project at a new site. Rather, the change involved a revised design and layout to locate the surface powerhouse in an underground gallery. The project and the site remained the same. WPPSS has been permitted to revise its designs and costs on a number of occasions.

WPPSS asserts that it is legally entitled to a preference in the licensing of any project in the reach of the Snake now under consideration by virtue of its alleged statutory preference under Section 7(a) of the Federal Power Act. The existence and scope of WPPSS's statutory preference under the Act, however, is a matter of law, not of evidence. It does not require or justify a new evidentiary presentation at any stage of the hearing short of licensing on every possible site in the Middle Snake, including allegedly inferior projects. Moreover, if WPPSS's alleged statutory preference justifies this late filing, the same argument could be made for a later amendment by WPPSS to build Lower Canyon, Pleasant Valley, or any other possible site within the common reach not now included in its pending application.

WPPSS argues that "neither the public interest nor the parties would be prejudiced by the filing of the proposed amendment," since it would not contribute to the lengthen-

ing of the hearing by more than a few days. The filing of the proposed amendment has already resulted in a postponement of the commencement of rebuttal from April 24, to June 12, and this only a few days after WPPSS's motion for a continuance of the commencement of rebuttal to June 12th, was denied. The acceptance of the proposed amendment and the consequent new direct case to commence June 12, 1961, will lengthen the hearing not by days but months.

I noted in my ruling of April 18th: "Further delay will increase, not diminish, the pressure for further revision and reevaluation. Under these circumstances, it would be difficult, if not impossible, to reach any terminal date for the conclusion of the hearing." Insofar as the public interest is concerned, the duration and expense of a public hearing are important considerations. The President's Conference on Administrative Procedure in 1953 recommended "That every agency consider unnecessary delay, expense and volume of records in adjudicatory and rule-making procedures to be detrimental to the public interest." (Rep. Pres. Conf. Ad. Proc. 13 1955) The Senate Subcommittee on Administrative Practice and Procedure of the Committee on the judiciary recently observed "Evidence gathered by this Subcommittee, as well as by all others who have made serious studies of the workings of the administrative process, has established that the greatest obstacle to the effective functioning of the quasi-judicial aspects of government has been delay and expense." (S. Rep. No. 168, April 14, 1961)

I am also mindful of Judge Prettyman's recent remarks in *People of the State of California* v. *F.P.C.* (C.A.D.C., March 30, 1961) to the effect that "the inundation of the material with immaterial minutiae is one of the griefs which beset the administrative process. It is well to recognize it."

If, as WPPSS maintains in its motion, absent the amended application, it is entitled to a statutory preference in the licensing of any project on the Middle Snake, no valid reason is advanced why the Commission should permit the introduction of a new case at this late stage which will merely load the record with repetitious or immaterial evidence. Obviously, WPPSS's statutory rights are not affected.

After careful consideration, therefore, and for the reasons hereinabove stated, both motions are denied and the hearing is recessed to June 12, 1961, at which time the order and the manner in which the parties will proceed, pursuant to their agreement, (Volume 66, Tr. 9823) will be as follows:

2. a. Presentation of new evidence
   (1) Washington Public Power Supply System
   (2) Pacific Northwest Power Company

   b. Presentation of rebuttal evidence
   (1) Pacific Northwest Power Company
   (2) Washington Public Power Supply System
   (3) Other parties
   (4) Staff

3. Designs and cost estimates representing new evidence will be served on the parties not later than May 29, 1961.

4. Prepared testimony and exhibits relating to new evidence will, to the extent feasible, be served on the parties by June 9, 1961.

5. Other prepared testimony and exhibits will, to the extent feasible, be served not later than five days in advance of presentation.

6. WPPSS and PNPC stipulate in the interest of avoiding undue prolongation of the proceeding that no new evidence will hereafter be offered other than that offered in accordance with paragraph 2.

This agreement supersedes the Presiding Examiner's Notice re Rebuttal Testimony issued February 23, 1961, subject however, to the requirement that Counsel shall be prepared to justify the proposed testimony, whether described as new evidence or rebuttal, by specific page reference to those portions of the record which the proposed testimony is designed to contradict, deny, or rebut.

This ruling will be certified forthwith on appeal to the Commission for its determination and approval, with leave to the parties to file objections thereto within ten days of the date of issuance.

WILLIAM C. LEVY
William C. Levy
Presiding Examiner

27198

[Docketed July 25, 1961]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Joseph C. Swidler and Howard Morgan

PACIFIC NORTHWEST POWER COMPANY — Project No. 2243

WASHINGTON PUBLIC POWER SUPPLY SYSTEM — Project No. 2273

Order on Motions Appealing Rulings of the Presiding Examiner

(Issued July 25, 1961)

On July 21, 1961, staff counsel filed a motion appealing rulings of the Presiding Examiner excluding evidence pre-

sented by Washington Public Power Supply System (WPPSS) during the rebuttal phase of the hearing for the purpose of showing that the High Mountain Sheep project as proposed in the record by Pacific Northwest Power Company (PNPC) is not the best proposal for that project. An answer was filed July 24, 1961 by PNPC. A motion similar to that filed by staff counsel was filed July 24, 1961 by WPPSS.

As indicated in our order issued July 20, 1961, we are of the view that an alternate plan of development is proper rebuttal evidence to show that the plan of record presented by a competing applicant as part of its direct case is not the best proposal for that project, and is not repetitious.

The Commission finds:

It is appropriate and in the public interest, in carrying out the provisions of the Federal Power Act, particularly section 10 (a) thereof, that the aforesaid rulings of the Presiding Examiner will be set aside and that rulings be made consistent with our views expressed herein and in our order of July 20, 1961.

The Commission orders:

The aforesaid rulings of the Presiding Examiner be and hereby are set aside.

By the Commission.

(SEAL)

J. H. GUTRIDE
Joseph H. Gutride,
Secretary.

27232

[Docketed Sept. 1, 1961]

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

PACIFIC NORTHWEST POWER COMPANY — Project No. 2243

WASHINGTON PUBLIC POWER SUPPLY SYSTEM — Project No. 2273

Motion for Leave to Amend License Application and for Order Declaring That License Application Shall Be Deemed Amended

Pursuant to Section 1.11 (b) of the Commission's Rules of Practice and Procedure, Washington Public Power Supply System (hereinafter termed "WPPSS") moves the Presiding Examiner for leave to amend its Amended Application (filed August 19, 1960) to conform to the exhibits and testimony of record as listed hereinbelow, pertaining to the designs and cost estimates of the High Mountain Sheep Project designed by WPPSS.

Attached hereto is a copy of an order of Earl Coe, Director of the Department of Conservation, State of Washington, authorizing WPPSS to construct this High Mountain Sheep Project and WPPSS Resolution No. 83 authorizing WPPSS to apply for a license therefor. This Order and Resolution, together with the exhibits and testimony listed

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hereinbelow comply with the essential requirements for a license application contained in Federal Power Commission Regulations 4.31, 4.40 and 4.41. Accordingly, WPPSS moves the Presiding Examiner for leave to make this

Amendment and for an Order deeming its Amended Application amended to include the Order, Resolution and exhibits and testimony described, without further and repetitive filing of these materials with the Commission.

WPPSS does not, by this Motion, withdraw any portion of the Amended Application of August 19, 1960 seeking a license for the Nez Perce Project, nor does it withdraw its Motion of July 24, 1961 seeking to conform that Amended Application to the evidence of the revised Nez Perce Project admitted to the record commencing on June 12, 1961. WPPSS contends, as it has throughout, that the Nez Perce Project set forth in the Amended Application of August 19, 1960 (as WPPSS seeks to amend it in its July 24th motion) is best adapted to comprehensive development of the stretches of the Snake, Salmon and Imnaha Rivers involved in this proceeding and hence to comprehensive development of the water resources of the Columbia River Basin. By this Motion WPPSS seeks to submit to the Commission for its consideration, if the Commission, contrary to the contentions of WPPSS, denies a license for the Nez Perce Project, an alternative proposal for the development

of the water resources involved, in supplement to that proposed in its Amended Application.[1] In so doing, WPPSS seeks to present all reasonable plans for developing these resources to the Commission and, simultaneously, to protect its priority right (under Section 7 (a) of the Federal Power Act) as a preference applicant, to any license for the High Mountain Sheep Project which the Commission might issue in this proceeding.

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[1] As the Amended Application is sought to be amended by the Motion of July 24.

EXHIBIT & TESTIMONY	DESCRIPTION	APPLICATION EXHIBIT
Transcript 646	High Mountain Sheep Operating Regime for Power	H
WPPSS 296	Sheet 4 Note re "Computation of Flood Control Benefit Advantage"	H
WPPSS 293	Data under "Coordinated Operation" on line "High Mountain Sheep" showing prime enerby, average energy over 20 years and January 1937 peak capability	I
WPPSS 264	High Mountain Sheep Project General Plan and Sections	J(1) and (2)
WPPSS 17	Nez Perce Project Location Map Access Road Map and Relocations	J(3)
	27235	
WPPSS 313	High Mountain Sheep Project Location Map Migrant Fish Facilities	K
WPPSS 317	High Mountain Sheep Project Downstream Migrant Fish Facilities	K
PNCP 1	High Mountain Sheep Location Map Hydroelectric Projects	K
WPPSS 242	High Mountain Sheep Project Arch Dam Geometry	L
WPPSS 245	High Mountain Sheep Project Ebasco Type Arch Dam on WPPSS Foundation Lines	L

EXHIBIT & TESTIMONY	DESCRIPTION	APPLICATION EXHIBIT
WPPSS 249	High Mountain Sheep Project Comparison of Arch Sections	L
WPPSS 265	High Mountain Sheep Project Elevation of Dam and Sections	L
WPPSS 266	High Mountain Sheep Project Powerhouse Transverse Section	L
WPPSS 267	High Mountain Sheep Project Powerhouse Plan and Longitudinal Section	L
WPPSS 314	Dam and Powerhouse High Mountain Sheep Fish Facilities	L
WPPSS 315	Powerhouse and Fish Ladder High Mountain Sheep Fish Facilities	L

WPPSS 316	Dam Upstream Fish Facilities High Mountain Sheep Project	L
WPPSS 318	Imnaha Fish Barrier Fish Facilities High Mountain Sheep	L
WPPSS 319	Flow Diagrams High Mountain Sheep	L
Transcript 13054 Lines 3-6	Description of Generators	M
Transcript 13054 Line 15 to Transcript 13055 Line 1	Description of Transformers and Electrical Gear	M

EXHIBIT & TESTIMONY	DESCRIPTION	APPLICATION EXHIBIT
Transcript 13099 Lines 7-18	Description of Turbines	M
Transcript 13101 Lines 1-13	Description of Butterfly Valves	M
Transcript 13101 Line 23 to Transcript 13102 Line 4	Description of Outlet Works	M
Transcript 13102 Line 21 to Transcript 13103 Line 6	Description of Cranes and Other Mechanical Devices	M
Transcript 13103 Line 19 to Transcript 13104 Line 3	Description of Auxiliary Electrical Equipment	M
WPPSS 268	High Mountain Sheep Comparative Estimate Summary	N
WPPSS 321	High Mountain Sheep Cost Estimate	N

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Transcript 12947 Lines 17-19	WPPSS Construction Scheduled for High Mountain Sheep Project	O
Transcript 12939 Line 15 to Transcript 12941 Line 19	Description of Project and Principal Project Works	Regulation 4.40 (e)
PNCP Exhibit 1 WPPSS Exhibit 313	Location of the Project, Designation of Streams, Adjacent Towns, etc.	Regulation 4.40 (f)

EXHIBIT & TESTIMONY	DESCRIPTION	APPLICATION EXHIBIT
Transcript 12941 Lines 1-6	Description of Initial and Ultimate Installed	Regulation 4.40 (h)[2]
Transcript 12940 Lines 5-9	Capacity of the Project	

Respectfully submitted,

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

By

/s/ EVELYN N. COOPER
Evelyn N. Cooper

/s/ WM. C. WISE
Wm. C. Wise

/s/ EDWIN J. DRYER

/s/ JOSEPH H. SHARLITT
Joseph H. Sharlitt

Washington, D. C.
September 12, 1961

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[2] The Amended Application of August 19, 1960 provided compliance, for purposes of a WPPSS application for the High Mountain Sheep Project, with the requirements of Exhibits A, E and G of Regulation 4.41, as well as the requirements of 4.40 (a) through (d). No amendment is required to comply with these requirements.

27297

[Docketed Jan. 15, 1962]

BEFORE THE FEDERAL POWER COMMISSION

In the Matter of

PACIFIC NORTHWEST POWER COMPANY — Project No. 2243

WASHINGTON PUBLIC POWER SUPPLY SYSTEM — Project No. 2273

Consolidated Proceeding

Introductory Material

Joint Exhibit

Pacific Northwest Power Company
Washington Public Power Supply System
Commission Staff Counsel

Applicants' Joint Statement

Pacific Northwest Power Company
Washington Public Power Supply System

27306

PART C—*Background of Proceedings*

1. *Prior Proceeding*—Project No. 2173.

A. On April 8, 1955, PNPC was granted a Preliminary Permit effective April 1, 1955 for a period of three years for Project No. 2173, consisting of two developments on the Middle Snake, namely, Mountain Sheep Development at

approximately river mile 192.8 and Pleasant Valley Development at approximately river mile 212.8 (14 FPC 644).

B. PNPC filed an Application for License for Project No. 2173 on September 7, 1955, and following a hearing the Federal Power Commission by decision of January 20, 1958, denied the Application (19 FPC 127). Application for Rehearing and Stay of the Commission's Order was denied on March 20, 1958 (19 FPC 353).

2. *Present Proceeding*—Project Nos. 2243 and 2273.

On March 31, 1958, PNPC filed an Application for License for Project No. 2243, also known as the High Mountain Sheep Development, to be located in approximately the same stretch of the Snake River at about river mile 188.9. Notice of this Application was duly given according to Section 4(e) of the Federal Power Act and the Commission's Rules of Practice and Procedure on October 26, 1959, and by Order of February 1, 1960 the Commission fixed March 21, 1960 for hearing on the Application.

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TABLE I
INITIAL PERIOD
(Common Reach Projects Except China Gardens, Whitebird & Freedom)
W I T H O U T C A N A D I A N S T O R A G E

	Nominal Prime Energy Avg MW Critical Hydro Period 1/		Avg. Energy Generation Avg MW 20 Years (1928 - 1948)		Plant Peak Capability MW January, 1937 4/	
Nez Perce Plan - WPPSS & PNPC	WPPSS Data 2/	PNPC Data 3/	WPPSS Data 2/	PNPC Data 3/	WPPSS Data 2/	PNPC Data 3/
Freedom	-	-	-	-	-	-
Whitebird	-	-	-	-	-	-
Nez Perce (Net)	1098	1087	1027	1015	1609	1925
China Gardens - Elev. 915	-	-	-	-	-	-
China Gardens - Elev. 905	-	-	-	-	-	-
Common Reach Subtotal	1098	1087	1027	1015	1609	1925
Downstream Effect						
Nez Perce	375	398	135	125	-	-
Total	1473	1485	1162	1140	1609	1925
High Mountain Sheep-Lower Canyon Plan - WPPSS High Mountain Sheep Plan - PNPC						
Freedom	-	-	-	-	-	-
Lower Canyon - Mile 3.7	-	393	-	388	-	654
Lower Canyon - Mile 0.5	423	-	407	-	580	-
High Mountain Sheep (Net)	762	766	647	646	1105	1344
China Gardens - Elev. 940	-	-	-	-	-	-
China Gardens - Elev. 925	-	-	-	-	-	-
Common Reach Subtotal	1185	1159	1054	1034	1685	1998
Downstream Effect						
Lower Canyon	270	261	86	78	-	-
High Mountain Sheep	180	179	57	54	-	-
Downstream Effect Subtotal	450	440	143	132	-	-
Total	1635	1599	1197	1166	1685	1998
High Mountain Sheep Plan - WPPSS Project No. 2243 Application - PNPC						
Freedom	-	-	-	-	-	-
High Mountain Sheep Net	776	761	645	626	1040	930
China Gardens	-	-	-	-	-	-
Downstream Effect	173	172	38	40	-	-
Total	949	932	683	666	1040	930
Difference: Nez Perce Plan To:						
High Mountain Sheep Including Lower Canyon	162	114	35	26	76	73
High Mountain Sheep Without Lower Canyon	(524)	(553)	(479)	(474)	(569)	(995)

1/ Without Canadian Storage the critical period extends from Sept. 1, 1936 through April 30, 1937 except that data for High Mountain Sheep Project alone the critical period data are based on a 7-month period from Sept. 16, 1936 through April 15, 1937.

2/ WPPSS data are based on ULTIMATE INTEGRATED OPERATION. Data are taken from Sheet 1 WPPSS Exhibit 293.

3/ Data given in PNPC Exhibits 81 and 82 for WITHOUT and WITH Canadian Storage, respectively, have been adjusted to exclude PNPC China Gardens Project.

4/ WPPSS data are based on end of January, 1937 and PNPC data are based on mid-January, 1937.

TABLE 1A
INITIAL PERIOD
(Common Reach Projects Except China Gardens, Whitebird, and Freedom)

Coordinated Operation 1/ Prior to Completion of 15,500,000 Acre-Feet of Canadian Storage

	Nominal Prime Energy Avg. MW			Avg. Energy Generation Avg. MW	Plant Peak Capability MW
	7-month 2/	8-month 3/	9-month 4/	20 Years (1928 - 1948) 5/	January, 1937 5/ 6/
Nez Perce Plan - WPPSS & PNPC					
Freedom	-	-	-	-	-
Whitebird	-	-	-	-	-
Nez Perce (Net)	1090	1056	1011	1075	1850
China Gardens - Elevation 915	-	-	-	-	-
China Gardens - Elevation 905	-	-	-	-	-
Common Reach Subtotal	1090	1056	1011	1075	1850
wnstream Effect					
Nez Perce	285	249	222	106	-
Total	1375	1305	1233	1181	1850
High Mountain Sheep-Lower Canyon Plan - WPPSS **High Mountain Sheep Plan - PNPC**					
Freedom	-	-	-	-	-
Lower Canyon - Mile 3.7	-	-	-	-	-
Lower Canyon - Mile 0.5	382	363	345	429	820
High Mountain Sheep (Net)	747	728	696	653	1125
China Gardens - Elev. 940	-	-	-	-	-
China Gardens - Elev. 925	-	-	-	-	-
Common Reach Subtotal	1129	1091	1041	1082	1945
Downstream Effect					
Lower Canycn	189	165	147	65	-
High Mountain Sheep	118	104	92	41	-
Downstream Effect Subtotal	307	269	239	106	-
Total	1436	1360	1280	1188	1945
High Mountain Sheep Plan - WPPSS **Project No. 2243 Application - PNPC**					
Freedom	-	-	-	-	-
High Mountain Sheep (Net)	739	693	667	653	1218
China Gardens	-	-	-	-	-
Downstream Effect	93	60	53	29	-
Total	832	753	720	682	1218
Difference: Nez Perce Plan To:					
High Mt. Sheep Including Lower Canyon	61	55	47	7	95
High Mt. Sheep Without Lower Canyon	(543)	(552)	(513)	(499)	(632)

1/ Data are taken from Sheet 1 of 2 WPPSS Exhibit 293 and reflect output of the respective WPPSS plans under Coordinated Operation as testified to by Witness Gallup. PNPC has no data which assumes such an operation.

2/ September 16, 1936 through April 15, 1937)
3/ September 1, 1936 through April 30, 1937) Represents conditions WITHOUT Canadian Storage

4/ August 1, 1936 through April 30, 1937) Represents condition with 8,500,000 acre-feet of Canadian Storage at Arrow and Duncan Lakes

5/ Data are the same WITH or WITHOUT Canadian Storage

6/ Peaking for end of month

TABLE 3
SUBSEQUENT PERIOD - WITHOUT CREVICE STORAGE
(All Common Reach Projects)

WITH CANADIAN STORAGE

	Nominal Prime Energy Avg. MW Critical Hydro Period 1/		Avg. Energy Generation Avg MW 20 Years (1928 - 1948)		Plant Peak Capability MW January, 1932 4/	
	WPPSS Data 2/	PNPC Data 3/	WPPSS Data 2/	PNPC Data 3/	WPPSS Data 2/	PNPC Data 3/
Nez Perce Plan - WPPSS & PNPC						
Freedom	84	84	101	101	207	208
Whitebird	30	30	34	34	69	60
Nez Perce (Net)	858	821	1042	987	1874	1333
China Gardens - Elev. 915	-	106	-	123	-	225
China Gardens - Elev. 905	87	-	104	-	195	-
Common Reach Subtotal	1059	1041	1281	1245	2345	1826
Downstream Effect						
Nez Perce	54	118	32	41	-	-
Total	1113	1159	1313	1286	2345	1826
High Mountain Sheep-Lower Canyon Plan - WPPSS High Mountain Sheep Plan - PNPC						
Freedom	84	84	99	100	207	208
Lower Canyon - Mile 3.7	-	333	-	411	-	356
Lower Canyon - Mile 0.5	359	-	436	-	805	-
High Mountain Sheep (Net)	513	513	610	593	1200	1014
China Gardens - Elev. 940	-	145	-	168	-	300
China Gardens - Elev. 925	118	-	137	-	236	-
Common Reach Subtotal	1074	1075	1282	1272	2448	1878
Downstream Effect						
Lower Canyon	39	77	16	34	-	-
High Mountain Sheep	14	53	15	10	-	-
Downstream Effect Subtotal	53	130	31	44	-	-
Total	1127	1205	1313	1316	2448	1878
High Mountain Sheep Plan - WPPSS Project No. 2243 Application - PNPC						
Freedom	-	-	-	-	-	-
High Mountain Sheep (Net)	512	513	610	593	1200	1014
China Gardens	118	145	137	168	236	300
Downstream Effect	14	53	15	10	-	-
Total	644	711	762	771	1436	1314
Difference: Nez Perce Plan To:						
High Mt. Sheep Including Lower Canyon	14	46	0	30	103	52
High Mt. Sheep Without Lower Canyon	(469)	(448)	(551)	(515)	(909)	(512)

1/ With Canadian Storage the critical period extends 43 months from August, 1928 through February, 1932.

2/ WPPSS data are taken from Sheet 2 of WPPSS Exhibit 293 except for the average energy generation at the Lower Canyon project. The 436 MW figure is taken from testimony, Tr. pages 13461 to 13466.

3/ PNPC data are taken from PNPC Exhibits 81 and 82 for WITHOUT and WITH Canadian Storage, respectively, except Freedom and Whitebird data. These latter data were computed by PNPC to reflect the power production for the projects under natural flow conditions.

4/ WPPSS data are based on end of January, 1932 and PNPC data are based on mid-January, 1932.

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[Docketed June 28, 1962]

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

WASHINGTON 25, D. C.

June 28, 1962

Dear Mr. Chairman:

Applications for major licenses for the proposed Mountain Sheep project (FPC Project No. 2243) and for the proposed alternative Nez Perce project (FPC Project No. 2273) are now before the Commission. The Department of the Interior commented on these applications in letters to the Commission dated November 21, 1960, and March 15, 1961. In the March 15 letter, we recommended that neither project be licensed until the results of accelerated research on the fish passage problem become available. Congress later approved the research program and appropriated $1,100,000 for that purpose during fiscal year 1962. The work was initiated as rapidly as possible, and it is currently on schedule.

Since our March 15 letter, we have carefully reviewed our earlier recommendation to the Federal Power Commission in light of the Government's responsibility for balanced development of all natural resources. A major water storage project in the middle Snake River will affect many fields of resource development in which the United States has vital interest. Its impact will be so great that we recommend that the United States, and not a non-Federal entity, construct the project ultimately selected as the more desirable. Taking all resources into account, we believe that the Mountain Sheep Dam on the Snake River represents the optimum development.

This supplement to our previous recommendation is based on the following considerations:

1. A multiple-purpose storage project in the middle Snake could be more effectively operated to obtain maximum sustained public benefits with the least conflict between uses if the project is a part of the Federal system. Such a project will be essentially an addition to the existing Federal Columbia River Power System. All downstream plants through which the stored water would run are or in all probability will be Federally owned. They include Bonneville, The Dalles, John Day, and McNary on the Columbia, and the four dams in the lower Snake River project, and Asotin and China Gardens on the Snake River. When completed, they will have a total head of

nearly 900 feet below the middle Snake storage plant and an installed capacity of more than 5,900,000 kilowatts. A tremendous quantity of secondary energy at these projects can be firmed by storage releases from the middle Snake. The Mountain Sheep project, with 2,000,000 acre-feet of storage (compared with 4,000,000 at Nez Perce) would increase the prime generation of the downstream projects by nearly 1,700,000,000 kilowatt-hours annually. However, to realize that benefit, the operation of the storage project in the middle Snake must be coordinated hydraulically and electrically with the Federal plants downstream. This means constant changes in the storage releases to mesh with releases from other storage reservoirs in meeting the ever changing load and water conditions at the downstream plants.

2. The fishery resources are vitally involved. The Fish and Wildlife Service of this Department is study-

ing intensively the passage of fish, both upstream and downstream, over large structures and through long storage reservoirs. Our studies to date show little promise of a sudden major breakthrough which could produce a satisfactory solution to the fish problem at the Nez Perce site by the end of 1964, which was the tentative date for completion of the accelerated research program. A calculated risk that by that time, or within a few years thereafter, Nez Perce could be accommodated to the anadromous fish runs representing 75 percent of the anadromous fish resources of the Snake River basin would not be warranted on the basis of what these studies are showing. The Mountain Sheep project represents less hazard to the fishery resource than the Nez Perce project. We hope the research program will develop effective means for fish passage which can be incorporated into new and existing projects, including the Mountain Sheep project. Additional study and research during the operation of a middle Snake River project may disclose improvements which can and should be made to protect still further the fish runs. Construction and operation of the project by the United States will assure that every effort will be made promptly to preserve and improve this important fishery resource in the light of experience and changing technology. The flexibility and relative ease with which facilities for effective fish passage could be incorporated in a multiple-purpose Federal project should be compared with the difficutlies that would be encountered in a project constructed and operated by a non-Federal entity. Particularly acute problems involving extensive readjustments for additional costs would be certain to arise.

3. Storage releases for navigation requirements could be made, under Federal ownership and operation, with

less effect on power supply. Water, and therefore energy, could be stored at other Federal projects to serve the load for which the released water

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would otherwise be stored in the middle Snake project. Conversely, navigation purposes at times require the maintenance of specified water levels in downstream reservoirs. This action results in loss of peaking capacity at the downstream projects. This loss could be minimized or avoided by storage releases from the middle Snake project so as to maintain the water level in the downstream reservoirs while, at the same time, permitting the use of the downstream plants for peaking purposes.

4. Federal construction will result in a lower cost of power. In addition, the installation of capacity by the Government could be scheduled in a more coordinated manner to meet area requirements, rather than the requirements of an individual utility's load or market.

5. We are now engaged in working out a long-term coordination agreement with non-Federal storage and generating entities on the Columbia River and hope to develop an agreement which will be mutually satisfactory. However, we believe that Federal ownership will allow a more precise and intimate coordination control in this area of the Snake River than any agreement with non-Federal entities. For example, the High Mountain Sheep project will provide 1,550,000 acre-feet of storage space which could be used effectively for flood control purposes. Any conflict between power and flood control operation at this single project could easily be minimized or avoided by the exchange or use of energy from other Federal projects. This would serve both the flood control and generating requirements of the area.

6. Another complex and costly problem which Federal construction will avoid is that of the adjustment, offset, or payment due to a non-Federal license for the operation of the project in a manner best calculated to serve the needs of the entire area.

7. Assurance of the continued availability of the Salmon River primarily for its fishery and recreational resources would constitute an important element toward the achievement of an over-all balance in the realization of a truly comprehensive plan for the utilization of the water resources of the Columbia River basin for multiple purposes.

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The Congress, in section 7(b) of the Federal Power Act, contemplated that the Commission, in the exercise of sound judgment, would recommend in particular cases that development of water resources be undertaken by the United States itself. In such cases, the Congress has provided that the Commission not approve any application for a license to construct a project but, instead, submit its findings and recommendations to the Congress.

For the reasons above stated, we believe that the varied and predominantly Federal interests involved in the development of this area of the Snake River outweigh other considerations and indicate that the Commission should recommend to the Congress that the Mountain Sheep Dam should be built by the United States.

Sincerely yours,

STEWART L. UDALL
Secretary of the Interior

Hon. Jospeh C. Swidler
Chairman, Federal Power Commission
Washington 25, D. C.